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REPEATED EXTRA-UTERINE PREGNANCY WITH THE REPORT OF A CASE.

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On the 14th of February, 1891, Mrs. M., the wife of a lawyer, consulted me, giving me the following history:

She was 30 years old, had been married the previous September, had been perfectly well and had believed herself two months pregnant, when, on the 25th of January, 1891, while staying at Atlantic City, she had a profuse hemorrhage from her uterus. A physician was called who, from her statement of probable pregnancy and hemorrhage alone, diagnosticated an abortion. The patient did not remember having passed any mass, or having at that time had any severe pain or colic.

This physician saw her only once more in the ten days that followed. On the tenth day she sat up and for one week thereafter the hemorrhage continued. She said that the physician made no examination at any time and gave her no treatment except to order her to keep her bed for ten days. When she called on me she was still losing some blood, not amounting to hemorrhage and as her trunks were packed to return to Philadelphia, where she expected to come within three days, I made no examination supposing the condition simply an incomplete abortion, but told her to complete her preparations for her return home, where I would see her and treat her as the case required. I expected to empty the uterus.

She returned to Atlantic City. Two days later, while still absent, she was suddenly seized with the most intense pain in the lower abdomen, fell to the floor and fainted. Dr. E. A. Reiley, living near by, (who had not seen her before) was sent for and had charge of her until the third of May, when she was able to be moved in a rolling chair to the train, was brought to Philadelphia, and came under my care. Dr. Reiley courteously furnishes the following history:

"Your letter asking for information concerning the case of Mrs. M. is at hand. I am away from home and can not give dates with accuracy, not having access to my books, notes, etc.

"Some time in February of 1891, I first saw the patient at Atlantic City. I was called hurriedly, and on arriving at the house, found her on the floor where she had suddenly fallen while exerting herself in arranging to move to her home in Philadelphia. She was lying on her back, with the knees drawn up, and complained of intense pain in the lower part of the abdomen.

"The lips and face generally were white, ashy and drawn, the nose presenting a pinched appearance and the whole look of the woman was as that of one dying. She was bathed in a cold perspiration and had no radial pulse, but was perfectly conscious and the pain seemed to be agonizing. As soon as possible after starting the use of the proper remedies, I attempted to make a vaginal examination, principally with the idea of finding signs of a miscarriage, or of a pregnancy. The os was closed and small, hard and resisting as in health, and there were no signs of hemorrhage flowing externally. On account of the great pain it occasioned I did not persist further in the examination at that time. In about an hour the radial pulse became perceptible. She was removed to a bed and in a few hours was apparently out of immediate danger. The pain persisted with diminished intensity for a week or ten days, and it was fully that time before a satisfactory examination could be made as I did not deem it necessary to use ether. During this time there was a slight yellowish discharge per vaginam. Upon examination I found a slightly fluctuating mass on the right side of, and in front of the fundus of the uterus. I should judge it to have been about the size of a small orange. From that time on it decreased in size and Mrs. M., though subject to some pain and soreness at times, made a continuous, though slow recovery.

"On the 14th of March I was taken ill myself and Dr. Kaemerrer took charge of the case for me but its slow progress was, I believe, without incident. I think she said at the time of the accident that she had not menstruated for two periods, but my memory is not clear as to what she told me about the time.

"I am sure the effusion was on the right side, although at this distance of time, with a long and severe illness of my own between, my 'quite sure' may possibly be wrong; but I think not as my memory of events connected with the case which came under my personal observation is very clear. I think I have stated everything that can bear on the case."

On her return I made a careful examination and found just the condition that Dr. Reiley described. The uterus was normal in size and position and quite freely movable. There was no uterine hemorrhage and the right side presented a mass, at this time about as large as a lemon. This, from the history, was evidently being absorbed, and she seemed perfectly well, excepting anemia, so I did nothing more than to advise against over-exertion, give iron, etc., and look after her general health. In July there was no longer any tumor to be found. She was then seemingly in perfect health and I did not see her for five months.

On the 3d of December, 1891, I received an urgent call to see her as she had suddenly been taken violently ill. I saw her at 5 P.M. I found her in bed propped up by pillows, face pinched and drawn, body wet with cold perspiration, and absolutely blanched by what proved to be an internal hemorrhage, radial pulse imperceptible, heart beating 168 times in a minute, respiration sighing; semi-conscious, and suffering excruciating pain in the lower part of her abdomen. The story was that her last menstruation had occurred seven weeks before and that she had supposed herself pregnant. The night before at 3 A.M. she had been wakened from sleep by violent pain. She cried out, awaking her husband; immediately lost consciousness and became very much blanched. Her husband called in the nearest physician, (a homeopath) who diagnosticated a retroversion of the uterus as the cause of her condition. Assisted by her hus-

band he put the nearly dead woman in the knee-chest posture, stuffed her vagina full of cotton, and left her with the assurance that she would soon be better. She did not improve under this treatment and he was called again in an hour, removed the cotton and gave her a hypodermic injection of half a grain of morphine. These hypodermics were repeated at intervals until, when informed that I was coming, he left word that he had given her five of a half grain each.

I found the vagina bulging forward, the uterus pushed up against the pubic bone and somewhat enlarged, but presenting no evidence of hemorrhage. Her abdomen was very much distended and dull in both flanks. The head was lowered, the foot of the bed raised and hot water bottles placed about her. Hypodermic injections of digitalis and whisky, and rectal enemata of milk and whisky were given. A ruptured tubal pregnancy with very great hemorrhage was suspected and her husband informed that her only hope was through the prompt performance of an operation, to which he consented. Dr. William Goodell was asked to see her with me and assist in an operation if he deemed one advisable. On our return we found the patient almost unconscious. Dr. Goodell quickly examined her, agreed with me in my diagnosis and with very little preparation the operation was begun. Dr. Goodell kindly etherized her, but during the operation the ether was turned over to a nurse.

Her condition was so desperate that time was an element of the greatest importance and we were obliged to do some things which under other conditions would not have been done. Although instructions had been left on my first visit to provide an abundance of hot water, this, in their panic, had been neglected and we were obliged to use water from the spigots in the bathroom for our instruments and for irrigation. The cleansing of the abdomen also was very hurriedly and imperfectly done.

The abdomen was opened in the median line. There was no blood from the incision and the tissues were perfectly blanched, On nicking the peritoneum black blood spouted up through the opening. From the history of her former attack I believed the cause for trouble would be found on the left side. I passed two fingers through masses of clotted blood, and brought out, ligated and incised, the ovary and ruptured tube. The tube was enlarged to the size of a large lead pencil and ruptured in the middle third. The other ovary and tube were found adherent to the fundus of the uterus, and, whereas the ovary on the left side, on which this last rupture had occurred, was apparently healthy, this ovary and tube were disorganized; the ovary was enlarged and as soft as cheese, so that it was removed in fragments from its adhesions. After its removal the abdomen was freed from clots and fluid blood. A pint vegetable dish, the only receptacle at hand, was filled four times, and in addition a pint of fluid blood was removed by sponges. Her abdominal cavity was then irrigated with several pitcherfuls of water. (The water from the hot water spigot was too hot and had to be cooled from the cold water spigot.) The abdominal and peritoneal incision was closed without drainage and the patient removed to bed. Her condition was better than before the operation, though the radial pulse was still imperceptible and the thermometer showed an axillary temperature of 96 degrees, but respirations were deeper and the pulse beat 140.

I remained all night and kept hot water bottles continuously about her, administered enemata of milk and whisky, and hypodermic injections of digitalis, whisky and strychnin, with I believe, one of atropin. For a few days the foot of the bed was kept elevated and she was denied a pillow. Rectal enemata of animal broths, beef juice, etc., with stimulants, were continued for three days. They were absorbed apparently without difficulty, due, I believe, to their frequent administration in small quantities. Thereafter she was fed as she could take food and the enemata were discontinued. She made an uneventful recovery and is now entirely well.

No products of conception were found, nor were they carefully looked for, as owing to the scarcity of vessels, the blood clots were emptied into the bathroom water closet close by as frequently as the vessels containing them were filled. The condition of the patient seemed so desperate and hopeless that there was neither time nor inclination for such a search.

The history undoubtedly indicates that she suffered a tubal pregnancy with rupture on the right side at Atlantic City in February, 1891, and in December, 1891, the left tube was ruptured because of a pregnancy in it. Each time she had symptoms of pregnancy—suppression of menstruation, morning nausea, prickling breasts, with symptoms and sequelæ of rupture. It is to be regretted that the fetus was not found and that the specimens were not examined microscopically.

Despite much speculation, the causes that lead to tubal pregnancy are not definitely or positively known. That *severe* salpingitis is not one, is evidenced by the fact that it leads to occlusion of the tube. Whether mild salpingitis, noticed upon microscopic examination of specimens from cases of tubal pregnancy is cause or consequence, remains undetermined. It seems fair to suppose—but it is only a supposition—that whatever the primary cause, the immediate causes of tubal pregnancy are an abnormal patency of the proximate end of the tube, or a stenosis of it elsewhere; with possibly a destruction of or loss of effective function of the ciliated epithelium lining it.

In view of this and other cases, which I shall subsequently recite, the question arises whether the existence of tubal pregnancy upon one side is an indication that the individual is prone to its occurrence upon the other, and whether this liability is so great, supposing operation necessary for an impregnated or ruptured tube, as to require the removal of the apparently sound tube and ovary.

My study of this and other cases leads me to the conclusion that both tubes and ovaries should invariably be removed in every case of ectopic gestation. The conditions which affect one cornu of the uterus, or one tube, are equally liable to affect the other. From the usual position of the uterus, with one cornu lower than the other, the most dependent tube may, from retention of decomposed discharges, be more prone to this accident; but any theory of immunity in one tube based upon a trifling difference of position will not justify leaving in the woman's pelvis that which may be an occasion of sudden and irremedial calamity to her.

The mere fact that women have suffered opera-

tion for a ruptured tube on one side, and have subsequently borne children without complication, is no argument in favor of such a procedure. It is fair to say that they have escaped a repetition of the calamity, *despite the fact* that all the elements for its occurrence were permitted to remain. The well-known case of Lawson Tait, quoted later, shows the danger of such a procedure, and the possibility that a normal pregnancy following an extra-uterine fetation is fairly to be considered more as an accidental occurrence than is a future pregnancy in the other tube and its possible fatal consequences.

Had the serious condition which occurred after the second rupture, followed the first one and operation been delayed, my patient would certainly have perished, and it is evident that she would have been spared the serious danger to her life through which she afterward passed, had she been subjected to operation at the time of the first rupture and the appendages of both sides removed.

That the danger of ectopic gestation in the second tube is not exaggerated is proven by the literature on the subject.

Parry (Extra-uterine Pregnancy—Its Causes, etc.) quotes cases as follows. He says:

"Campbell quotes from the *Journal de Medecine, Chirurgie, Pharmacie*, etc., 1785, the history of a woman whose eighteenth conception was erratic. She recovered and retained the child thirty-three years, and died at the age of 75 years. At her autopsy it was found that the abdomen contained an ovoid mass weighing five and a half pounds, composed of perfectly dry cartilaginous structures, inclosing a mature male fetus, with its funis and placenta. After the removal of this last, another body the size of a hen's egg, also cartilaginous, containing a fetus the size of one of two months, was found to the left side of the uterus."

This may have been a twin conception. Varnier and Mangin (Moreau, Des Grossesses Extra-uterines, 12mo., Paris, 1853, p. 115) in the *Journal de Medecine*, 1786, state that they made a postmortem examination of a woman who died aged 74 years, and they found what they believed to be a double ventral pregnancy.

M. Galiay (*Gazette Medicale de Paris*, July 29, 1737) has known a woman to conceive two extra-uterine children. In the interval between the two pregnancies, the product of the first was evacuated through the rectum, after which she enjoyed good health for five or six years, when she conceived again. This child also was located out of the womb, and like the first, was finally discharged through the bowel, after which the woman regained her health.

In 1850, Dr. F. Brown reported (*St. Louis Med. and Surg. Jour.*, May, 1850, p. 205) that he had the care of a woman who, after having aborted a number of times, finally carried a child to term, but it proved to be extra-uterine. Two years later she conceived again. At the end of the sixth month symptoms of labor came on, after which the cyst opened through the abdominal walls. The orifice was enlarged and the bones extracted.

In 1853, M. Oulmont had under his care, in the Hôpital de le Salpetriere (Moreau, loc. citat. p. 110) a woman aged 31 years, who had never borne any children, and who died of rupture of the cyst when she was three months gone. At the autopsy the product of the recent conception was found in the pavilion of the tube on the right side. A second tumor was found at the extremity of the left tube. It was smaller than the one on the right side, and contained a small anencephalous fetus, which, after an attentive examination, M. Oulmont concluded was the result of a conception some years before.

Parry also quotes in long detail a case from The Transactions of the London Obstetrical Society, 1863, an abstract of which is as follows: A woman died of rupture of a tubal gestation sac. There was a history of a previous probable ruptured tubal pregnancy four or five years before this later one. Dr. J. Tyler Smith and Dr. Braxton Hicks were deputed by the Society to examine the specimens and they reported: "That at some time previous the patient had conceived extra-uterine, and that the fetus died at about the second month, and that at some time after this pregnancy she again conceived extra-uterine and that the rupture of this second sac caused her death. This report was based on the condition of the tubes, uterus and ovaries and also upon the finding of two fetus in conditions justifying these conclusions."

Dr. W. Gill Wylie (Trans. New York Obstetrical Society, Dec. 16, 1890) reports a right tubal pregnancy which occurred after the removal of the left tube and ovary. He is quoted as believing that the first ovary, tube and débris removed "may have been" a degenerated tubal pregnancy.

Lawson Tait, in the *British Medical Journal* of May 12, 1888, reports a case in which he removed a three months' fetus and ruptured right tube from a "belly full of blood clots and bloody serum." This on May 11, 1885. Eighteen months later the patient was delivered of a child at full term. Fifteen months after this delivery she became pregnant again and went to the fourth month. On a certain day at 1 o'clock P. M., she had the symptoms of rupture of a tubal pregnancy and died at 5 P. M. without operation. A postmortem disclosed a ruptured tubal pregnancy of the left side. In reference to this case, Tait makes the extraordinary statement: "In this case we have the almost incredibly strange instance of a woman suffering from tubal pregnancy twice, with the still stranger fact of her having a normal pregnancy between the two occurrences."

G. Earnest Hermann, in the *British Medical Journal* of 1888, Vol. 1, p. 1152, reports: "A Case of Extra-uterine Gestation cured by Abdominal Section two and a half hours after Rupture," as follows: He operated—removed a right ruptured tube and a four months' fetus. He says nothing of the left tube or of its condition, but the woman had been treated three years before by rest, etc., in the same hospital, for what had been diagnosticated as a ruptured tubal pregnancy of the left side and had presented all the symptoms thereof—amenorrhœa, followed by a discharge of blood, etc., pain, shock, a tumor which subsided and disappeared. The uterus was enlarged to three and a quarter inches in depth and the temperature was 100° F. He says: "If the diagnosis of the first illness be correct the case is an instance of two successive extra-uterine pregnancies in the same individual—first in one tube, and then in the other. There may have an identical morbid condition of the right and left tubes which occasioned the failure of the ovum to reach the uterus."

Hermann also reports, in the *British Medical Journal*,

September 27, 1890: "A case in which second Tubal Pregnancy in one Patient was Diagnosed and Removed before Rupture," as follows:

"In January, 1887, right tube removed for a ruptured tubal pregnancy of that side. May 13, 1890, an unruptured tube containing a fetus was removed from the left side. He says in reference to this case, and probably with the thought of the case previously quoted in his mind: "Tubal pregnancy is so often bi-lateral that I think it probable that similar cases may hereafter be found to be commoner than appears to be at present supposed."

In the *British Medical Journal*, 1892, Vol. 2, p. 732, there is reported a case upon which Galabin operated and the specimen from which Bland Sutton examined. It was reported under the title: "A Case of Tubal Gestation in which both Tubes were Gravid—Operation and Recovery." Upon examination of the specimens Sutton writes: "In this case we have to do with pregnancy in each tube, but the pregnancy in the left tube is much more advanced than that in the right tube;" and, after quoting three other cases in which he believed that concurrent pregnancy in each tube existed, but in which the proof was not absolute, he again states: "In this case the existence of impregnated ovum in each tube is beyond all doubt."

Mackenrodt, in the *Zeitsch. für G. and G.* (Band 23, heft 1) reports a case as follows: "In May, the patient had symptoms of tubal pregnancy and of rupture of the sac, but refused operation. In October, 1891, she again had same symptoms and operation revealed a left-sided gestation sac the size of a goose egg, and on the right side a sac, bound in by adhesions and inherent intestines, containing fetal bones."

Olshausen, (*Deutsch. Med. Woch.*, 1890, No. 9, p. 174) reports that on Nov. 1, 1888, he removed a living fetus from the right tube. One year later patient came again with all the symptoms of a ruptured tubal pregnancy. He now removed the left tube in which was decidual tissue.

Dr. Theodore Mayer of Copenhagen, is reported in the *Annals of Gynecology*, 1890, Vol. 3, p. 501, as having removed the tube and ovary of a ruptured tubal pregnancy from the left side on January 19, 1888. On September 6 the patient had a hemorrhage and fainted, and a soft mass was found on the right side the size of a large walnut. Two days after, patient fainted again and was in a collapsed condition for some time. On October 25 she had a hemorrhage of dark blood from her uterus, pain in the abdomen, vomiting, etc. On October 29 she "passed a membrane which had all the characteristics of a true decidual pregnancy." On November 13 "a big, soft swelling" was found to the right of and behind the uterus which grew harder and harder, and gradually disappeared.

In the *British Medical Journal* of June, 1892, Thomas Savage reports a case in which upon operation he found the right tube ruptured in the center and "an apoplectiform mole" escaped; on the left side, a tumor—"a black clot as large as the closed fists" was found adherent to omentum and intestines. The ampulla on that side was found dilated.

Boisleau (*Arch. d' Obstet. et Gyn.*, May, 1892) gives the history of a case in which seven weeks after operation for ruptured tubal pregnancy, of which no particulars are given, operation for the same condition was again demanded. He states that microscopic examination of the specimens from both sides prove both to be tubal pregnancies.

Kletzsch, in the *American Journal of Obstetrics* of May, 1888, p. 520, details the case of a woman from whom Dr. Thomas removed an extra-uterine pregnancy (side not stated) in June, 1884, and who, in October, 1887, after cessation of previously regular menstruation for two months, had then and thereafter all the symptoms of ruptured tubal pregnancy; but who slowly recovered without operation. He states that Dr. H. C. Coe concurred in the diagnosis.

Albert Peuch (*Gaz. Obstet.*, Paris, 1879) reports two cases as follows:

Case 1.—A woman aged 30, having had seven labors, the last resulting in twins, became pregnant for the eighth time. At term she became ill and the movements of the fetus ceased. On recovery her menses were re-established and she finally became pregnant for the ninth time. The ninth pregnancy progressed to the eighth month when she developed an abscess in the abdominal wall, and was at the point of perishing. The abscess opened and a piece of bone was discharged. She applied to a surgeon for relief. He introduced a stylet into the cavity of the abscess and enlarged the opening with knife and forceps, removing a fetus, bone by bone. A tumor, referred to the left side, which was the product of her last pregnancy, was allowed to remain, owing to her feebleness during operation. Subsequently gastrotomy was performed and the product of her remaining pregnancy was removed, member by member. Contrary to all hope the patient recovered.

Case 2.—A domestic. Died twenty-four hours after a rupture of a tubal pregnancy, apparently four or five months advanced. At the autopsy all the organs were found normal except the uterus and its adnexæ. The uterus measured four inches in length. The right ovary and tube were distended into a sac having a globular form and a diameter of three and a half inches. It contained a fetus at about the third month. Upon the side of the sac was a solid, irregular tumor the size of a nut, hanging by its membranous adhesion, like a polyp. Upon examination it was found to contain an embryo enveloped in the membranes proper. Six months before her death she had had intercourse a number of times with the man who had impregnated her the last time.

Bröse (*Zeitschrift für Geburtshilfe and Gynakologie*, 17, '89, p. 335) demonstrated a tubal pregnancy on the left side with hemato-salpynx of the right tube, which he had removed by laparotomy. Patient was a 2-para. Three months after the cessation of her menses the decidua came away, preceded by hemorrhage on the day before. At the laparotomy a right-sided hemato-salpynx was found with brown fluid blood in the peritoneal cavity. The left-sided tubal pregnancy was not ruptured.

Veit (*Zeitschrift für Geburtshilfe and Gynakologie*, Vol. 17, p. 335) exhibited a tube filled with blood coagula which he found by microscopical examination to have been the result of pregnancy. The tube he had removed by laparotomy from a patient upon whom he operated for a similar condition on the other side. He reported also two other cases in which he had operated and removed tubal pregnancies, and in each of which all the symptoms had returned at a later period, but the patients recovered without operation. Questioned as to the possibility of making a diagnosis, Veit replied that the menses were absent, the patients came under observation suffering severe pain; after entrance to the hospital they had slight hemorrhage, in which no parts of the ovum could be recognized. There was a hard tumor of the tube from which the pain radiated.

Von Heukelon (*Centralblatt für Gynakologie*, No. 3,

1887) refers to a case, described by Dr. Nijkampin (*Nederl. Tijdschr. V. Geneeskunde*, 1885), dying of internal hemorrhage from the rupture of a tubal pregnancy. On autopsy the uterus was found reaching to the upper level of the symphysis, with thickened walls of soft consistency. The right tube about four centimeters from the uterus, has been distended, forming a cyst about the size of a walnut, which had ruptured. In Douglas' pouch was found a large mass of soft fresh coagula containing an embryo, upon which the eyes and ears could be recognized. Upon the left tube about four centimeters from the uterus was a fissure two centimeters long. At this position were found a number of flakes of connective tissue and membranes resembling torn tissue. Upon the posterior surface of the ligamentum latum were seen a number of flakes of circumscribed yellowish brown coagula lying in little pockets. The left ovary contained the remainder of an old corpus luteum. The right ovary showed on section a corpus luteum the size of an almond. He believed that very probably three or four months previously conception had taken place and the ovula had found attachment in the left tube, developed and, six or eight weeks before the woman's death, the sac had burst, giving rise to a small hemorrhage which had soon become encapsulated. This was explained by the yellowish brown coagula and the fissure in the left tube. Soon after, an impregnated ovule had become attached in the right tube, developed and ruptured; causing the woman's death.

Lopes (*Revista de Medicina y. Cirrugia Practica*, 1880) refers to a case described by Silva. The woman died suddenly with signs of an acute inflammation. On autopsy a tumor was found containing five liters of sero-sanguineous fluid, which was demonstrated to contain the products of conception. The placenta was situated in the right iliac fossa. In the superior part of the epigastrium another sac was found from which a female fetus was removed.

Dr. John W. Taylor, in the *British Gynecological Journal*, August, 1892, p. 168, reports a case as follows. He says:

"On December 22, 1889, after nearly six months' amenorrhœa, during which she believed pregnancy had begun, the patient was attacked with symptoms of peritonitis. Coincident with this, a tumor—evidently a hematocele—developed on the left side of the uterus. I diagnosticated the condition as probably due to the rupture of a tubal pregnancy, but the hemorrhage was not severe and was evidently circumscribed by local inflammatory action. In twelve hours all the more acute symptoms had subsided. When I next saw the patient a well developed hematocele of considerable size remained in the pelvis. The patient was kept in bed six weeks, by which time the hematocele had become absorbed and the parts, on examination, had returned to a fairly normal standard."

Two years after, Dr. Taylor operated on this same patient for a ruptured tubal pregnancy and removed, from an abdomen full of blood, the left tube and gestation sac. He found a recent rupture (he doesn't say exactly where) in the tube, but states that near the end of the tube there was an old rupture which he believes to have been occasioned by the previous attack. He states that the other ovary and tube were apparently healthy and normal and he left them in.

This case is an exceedingly rare one as his belief is that this woman suffered two ruptured tubal pregnancies in the same tube. In the fact that the same tube was involved each time it differs from the other cases I have quoted.

Frommel, in *Medic. Woch.*, 1890, No. 23, p. 494, describes a case as follows:

"In 1883 he operated upon a woman, 33 years old, eight days after the rupture of a tubal pregnancy and extracted the fetus, etc. This pregnancy was in the right tube. Four years after, in May, 1887, the patient's menses ceased for eight weeks; she was suddenly seized with pain in her abdomen on the left side, with vomiting; she fell in the street, became suddenly pale and no pulse was to be found. The next day she expelled membranes which a microscopic examination showed to be decidual.

"On vaginal examination, a tumor, elastic, filling the pelvis and pushing the uterus forward and upward, was found. The patient recovered from this acute attack, and four weeks after again had all the symptoms of internal hemorrhage. The tumor increased in size and there remained thereafter a hematocele. This slowly diminished and the patient made a slow recovery."

Dr. W. A. N. Dorland of this city has kindly furnished me particulars of the following case, which was operated on successively by Dr. B. F. Baer and Dr. Dorland:

"On the 11th of October, 1890, E. L. called at the dispensary of the Polyclinic hospital. She was then 28 years old, had had four children—the eldest six years and the youngest fifteen months old. She said that she had missed her menses for three weeks and believed herself pregnant, but that after two weeks her menses came on, although not so freely as formerly and the discharge was much lighter in color. When menses returned they were associated with cramp-like pains—"a bearing down not unlike labor pains." She was having repeated rigors followed by fever; was anemic and very much prostrated and the abdomen was quite enlarged. The cervix was found on the floor of the pelvis, the os was patulous, and the body of the uterus was enlarged to the size of the second month of gestation. To the left was found a circumscribed mass, apparently attached to the uterus, fluctuating, about the size of an orange, and tender on pressure. Operation was done by Prof. Baer on the 20th of October, 1890 and a ruptured tube of that side with fetus in situ, blood clot, etc., found and removed. She made a good recovery.

"On the 19th of July, 1892, the patient returned saying that she had the same symptoms as before, excepting that this time the right side seemed involved, and she thought she was pregnant again in the same way. Examination showed a slight increase in the size of the uterus and a small tender mass on the right side. Dr. Dorland says: On August 10 I was sent for at 1:30 A. M. Found her pale and anxious. She had had a severe attack of pain on the night of the 6th of August; on the 7th, a discharge of blood from the womb; on the 8th five fainting spells. Examination showed womb considerably enlarged and tumor to the right much increased in size and perceivable through abdominal wall; a boggy mass in Douglas' pouch; operation same day; tubal pregnancy, fetus in situ in tube, abdominal cavity full of blood, good recovery."

Since this paper was practically finished Carl Beck of New York, records in the *American Journal of Obstetrics* for April, 1893, under the title "Ectopic Pregnancy twice in the same Patient" a case as follows:

"Dr. C. A. L. Reed of Cincinnati, had operated upon the patient on the 20th of March, 1891, and in a letter to Dr. Beck states that, 'I was called to see Mrs. M., by Dr. J. A. Johnson, who informed me that she presented the evidences of ectopic pregnancy. I made a section and found the abdomen full of blood. We took out a large number of laminated sacs from the cul-de-sac and removed the appendages from that side. There was a rent in the tube. There was nothing in particular about the operation beyond that which is peculiar to ectopic pregnancy. I did not find the fetus for the evident reason that the rupture had obviously occurred some time before and the fetus had disappeared by maceration.

"The woman was so thoroughly exsanguinated by the operation and by the loss of blood—for I had operated on the heels of a recent hemorrhage—that I made no search whatever for the appendage on the other side, which I believe ought always to be removed when practicable, and when not contra indicated by an exsanguineous condition of patient whenever an operation is done for an ectopic pregnancy.'"

This woman came under the care of Dr. Beck on the 23d of August, 1892. She had missed two periods and believed herself again pregnant. On that morning she had a sharp pain in her abdomen and felt that she was going to miscarry. Her symptoms, which it is not necessary here to relate, led Dr. Beck to operate three days later.

He says: "A large tumor of fleshy appearance presented itself embedded in adhesions from all sides. It seemed to be the pregnant uterus, though the walls were very thin at the apex and fluctuating so markedly that I was not sure whether it was not the cyst of an extra-uterine pregnancy.

"On the right side a short tube about one-half of the normal length was seen ending suddenly in the large tumor. The ovary was normal. He incised the tumor and extracted the fetus and membranes of a pregnancy of over three months.

"When the fetus was removed the walls were easily seen to be hypertrophic and muscular, contracting and getting thicker, and by introducing my finger into the cavity I could distinctly feel the difference between the uterus and tube. The placental portion of the membranes had been attached to the tubal portions. An extirpation of the sac was, on account of the indistinct termination of the same, not possible without extirpation of the entire uterus. I therefore closed the incision by deep and peritoneal stitches."

In the discussion which followed Dr. Beck's paper (it was read before the Gynecological Society of Chicago) Dr. Fred Byron Robinson said that he believed that Dr. Beck's case "is a case of pregnancy in the horn of the uterus and not in the tube," and in this judgment I concur, although I have thought it wise to quote the case among those collected by me.

I am aware that not all of these cases are entirely proven. Yet observers, probably as capable of making a diagnosis as are those who will criticise them, and with the advantage of personally seeing the patients and the specimens, believed them to be cases of repeated extra-uterine fetation. But if even a very few cases were proven, the fact and the expectation and probability of like morbid or abnormal conditions prevailing in each of two symmetrical and identical organs excites the careful consideration of the initial question of this paper.

Now, if, in addition, we remember that Lawson Tait, Bland Sutton and others claim and apparently prove that many cases heretofore called "hematoma of the broad ligament" and "pelvic hematocele" are really ruptured tubal pregnancies, differing only in that rupture has occurred into different structures, and, further, that most cases of hemato-salpynx are the same conditions unruptured; and that a very large number of cases have been reported, in which, upon operation or autopsy after tubal pregnancy of one side, one of these conditions was found existing on the other side, we will see how frequent repeated tubal pregnancies are, and the facts will, I believe, justify me in the position I take and which I again state, that, in all cases in which, upon operation, a tubal pregnancy is found, the ovaries and tubes of both sides should invariably be removed.

DR. H. J. BOLDT of New York City, related a case to impress the view which he held in opposition to the essayist, that where the opposite tube and ovary were healthy, they should be allowed to remain. Where, however, they were diseased, they should be removed in the class of cases under discussion, just as during an operation for pyosalpynx or other condition.

DR. JOSEPH EASTMAN of Indianapolis, objected to operating on healthy appendages, because on one side there might be tubal pregnancy, and the danger of having to submit to a second operation was more than offset by the enhanced danger of the double procedure at the same sitting.

DR. HOWARD A. KELLY of Baltimore, thought especial attention should be given the pathological condition. The studies of his assistant pointed to crypts or diverticula in the mucous membrane of the tubes, sometimes observable under the microscope, as the cause of tubal pregnancy, the ovum becoming lodged in one and unable to pass to the uterus. But we could not say that this condition existed, making tubal pregnancy probable in a tube which appeared to be normal, simply because tubal pregnancy had occurred on the other side.

DR. HORACE T. HANKS of New York City; DR. C. R. REED, of Middleport, Ohio; DR. CHARLES P. NOBLE of Philadelphia; DR. J. HENRY CARSTENS of Detroit, and DR. A. MCLAREN of St. Paul, favored removal of the appendages on the opposite side when they were diseased, but objected to the procedure when there were no indications of disease.

Dr. O. B. WILL of Peoria, Illinois, had for several years been investigating the matter of catheterization of the Fallopian tubes, and had been able to demonstrate its possibility in a number of instances. He reported two cases in which the tubes were easily dilated, which he thought had a possible bearing on the etiology of extra-uterine or tubal pregnancy.

DR. MCKELWAY, in closing, said the danger of removing a perfectly healthy tube and ovary, when an operation is being done for a ruptured tubal pregnancy had been exaggerated. It was not a difficult thing usually to remove a tube and ovary that were perfectly healthy.

EXTRA-UTERINE PREGNANCY.

Read in the Section of Obstetrics and Diseases of Women, at the Forty-fourth Annual Meeting of the American Medical Association.

BY A. H. CORDIER, M.D.

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A few years ago the report of a case of extra-uterine pregnancy was a rare event. They are frequent at this time; in fact, one can scarcely glance over a medical journal without seeing one or more cases reported. These cases are being recognized and reported with such frequency that one feels like apologizing to the members of a national organization for offering an addition to the list. However, it has been through the rehashing (so to speak) of this topic that this familiarity of the subject has been attained and the tabulation of these good results made possible. I shall dwell upon the pathology of ectopic gestation only so far as is necessary to sustain the position I hold, relative to the mooted location of the fœtus in some instances, i. e. intra-ligamentous.

While my experience in extra-uterine pregnancy has not been an extensive one, it has been characterized by a multiplicity in number considering the length of time since I saw my first case.

In two years in my own practice and in that of others in which I assisted at the operation, I have had an experience of sixteen cases. The duration of pregnancy has extended over as wide a range as the location of the fetus has in variety; from six months to two years—from a soft gelatinous embryo to a

well formed nine pound child; from a cob-nut size embryo in the tube to a full grown child in the broad ligament. It is only in the tube ectopic gestation takes place and all other varieties are only made so by rupture of the tube as the fetus develops. Tubal abortion (?) being the exception, this may be excluded from the list with safety.

It is evident that all cases of tubal pregnancy rupture at some period, unless the growth of the fetus is stopped by some means, but the methods advocated to check the growth of the embryo are so uncertain in their results, so unsurgical and so dangerous to the mother, and the diagnosis so doubtful prior to rupture, that they are to be practically excluded from the management of these cases.

Intra-peritoneal is to extra-peritoneal rupture in the proportion of three to one. When rupture takes place between the layers of the broad ligament, the hemorrhage is limited by the resistance offered by the surrounding structures, death rarely occurring to the patient from this first rupture. The fetus may in this situation ("and in fact it is the only one in which it does," Tait) survive the accident and either continue to grow to the full period of gestation, or rupture secondarily into the peritoneal cavity, and cause speedy death of the mother from hemorrhage. Jesop's and Hoffman's cases of abdominal pregnancy were cases where the mother survived even this secondary rupture. The fetus dies, as a rule, after the primary rupture or at a later period before the ninth month, giving rise to suppuration in the leaflets of the broad ligament, leading to pelvic abscess, which may at any time burst into the peritoneal cavity, producing a rapid septic peritonitis and death, or it may open externally, by one or more fistulous tracts through the vagina, rectum, bladder or intestines. With rare exceptions the dead embryo becomes encysted and remains for years, placing the life of the woman in constant jeopardy. Cases terminating by suppuration are within the range of surgical interference.

When rupture of the tube has occurred it does not necessarily follow that all maternal and fetal structures be entirely and instantly separated and the embryo dislodged. This process when the rupture takes place into the ligament is as a rule a gradual one; some of the chorionis will remain attached to the tubal mucous membrane until the embryonical structures have established an independent existence, the child then continuing to grow; if this process of expulsion is a rapid one, then the fetus dies and an apoplectic .ovum is the result, the hemorrhage is small and imprisoned or the bleeding may be profuse, killing the woman in a few hours. In the apoplectic as in the uterine abortion the hemorrhage is liable to occur at any time as long as the ovum is not removed. There is an authentic report (Tait) of a primary peritoneal pregnancy. The cases reported as such, where the child became viable, I believe were originally tubal, then intra-ligamentous, secondary rupture taking place converting it into an abdominal. In these cases the placenta will be found to occupy a position below the fetus usually in the bottom of the pelvis. When the tube ruptures into the peritoneal cavity the hemorrhage is always of the most profuse character, killing in many cases within a few hours after rupture, unless saved by timely and good surgery. In rare instances where rupture takes place and even where there has been profound shock from the traumatism and loss of blood, the patient may rally and recover entirely. The peritoneum has wonderful resisting powers to septic invasion, if the poisonous material is against its outer surface. This membrane can be dilated and stretched considerably if only that process be a gradual stretching. This is exactly what takes place during the slow growth of an intra-ligamentous pregnancy, where the protrusion of the embryo from the opening, at the site of the tubal rupture, has not been an abrupt process attended by a large hemorrhage. In intra-peritoneal rupture the first bleeding may not prove fatal, after giving rise to the most alarming symptoms; at any moment the hemorrhage may recur and kill the woman before the surgeon arrives.

A hemorrhage occurring in the peritoneal cavity differs from a bleeding occurring in any other part of the body; owing to the presence of more or less lymph in air-tight cavity the blood does not coagulate quickly and the clots that are formed are soft and friable and not of that character to firmly occlude the open mouths of the ruptured blood vessels and thereby permanently control the bleeding. They are easily washed away by the blood current with the increased force of the heart's action after the subject has temporarily rallied from the immediate depressing effects of the first hemorrhage. The treatment of this intra-peritoneal rupture may be summed in a few words: stop the bleeding promptly, remove the ruptured tube, wash out the cavity with hot sterilized water, and drain. The restorative agents and tonics should constitute the after treatment of these cases.

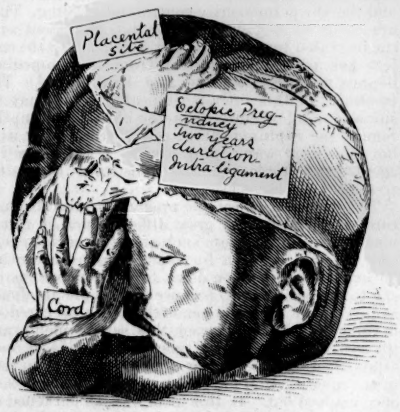
The diagnosis of ectopic pregnancy prior to rupture is attended with great difficulty and is rarely made; the symptoms are such after this accident has occurred that one can form an opinion warranting an exploratory incision down to the peritoneum. I say to the peritoneum, because if you are in doubt as to whether a *serious* hemorrhage has occurred or is going on, when you reach this serous membrane the correctness or error of your diagnosis is at once established and the proper course for you to pursue in the investigation or management of the case is at once mapped out. If this membrane is darkened or almost black and bulges through the incision you may at once know that a hemorrhage has taken place or is going on, or that there is some abnormal condition giving rise to the presence of a dark fluid, and the justifiability of carrying the investigation farther will be at once settled beyond a doubt. In many of these cases there is a history of some menstrual irregularity or deviation from the accustomed course in the case under investigation, such as the missing of one or two periods or an irregular intermenstrual period or flow occurring in a woman previously regular, culminating in an attack of acute suffering in the region of either uterine appendage accompanied by shock and symptoms of loss of blood.

Ectopic Gestation. Case.—Intra-ligamentous. Full-grown child retained nearly two years. Operation by Drs. Griffith and Cordier. Recovery.

Mrs. S., age 24. April 20, 1893, date of operation. April 15 I saw this lady for the first time. Says she has never given birth to a living child or had a miscarriage. Previous health good. In August, 1891, she missed a period, having been regular prior to that time. In October no appearance of menses but in November flowed for three weeks, during which time she had pains in region of uterus of a paroxysmal character. Later in November she had "fainting spells"

and was semi-conscious for a few hours, but warm applications and brandy revived her. Never had any sickness at stomach. Breast became enlarged in December, 1891, with a darkening of the areolæ followed later by a secondary dark ring. Decidual shreds passed in November, 1891. She felt fetal movements in December, 1891, which continued up to April, 1892, or nine months after the date of conception. During March and April she had false labor pains with a steady flow of a watery looking fluid, with occasional small gushes; during this time she diminished some in size. Says enlargement was more on her left side in the beginning but soon became central. She did not have a regular menstrual period from August, 1891, to December, 1892. From November 1891 to April 1892 she had at times a "rusty discharge." She menstruated in December 1892 and was regular up to March 16, 1893. Since then (this is June 1) she has not seen her flow and the indications are that she is now pregnant. The pregnancy antedating the period of operation by four weeks.

This lady's mother consulted me in June 1892 relative to her daughter, stating that she had a "tumor of fifteen months' duration" and that she desired me to see the case. A few weeks later I asked the mother why the daughter had not been to see me; she stated that a physician had told the daughter that her "tumor" was a pregnant uterus. Said they were delighted to know that they were mistaken about its being a tumor. From this time the case dropped out of



my sight, but I thought of the case often as the history given me by the mother was a suspicious one and led me to believe at that time that it was an extra-uterine pregnancy. She returned with the daughter April 15, 1893 and I was called to see her with Dr. Griffith. At the time I saw her with Dr. Griffith she presented the appearance of a woman in the seventh month of pregnancy, fairly well nourished, good spirits and fairly good general health.

On examination we found a firm unyielding tumor extending two inches above the umbilicus centrally located, slightly movable, not painful to the touch or on handling. Dull on percussion, no fluctuation, no fetal or placental sounds, Digital examination located the uterus, a little enlarged, rather high under the growth to the front with the cervix pointing backwards. The tumor being posterior and to either side was under firm pressure slightly movable, giving the same resistance to pressure as was noticed on abdominal palpation. The diagnosis at this time was doubtful; the theory of ectopic gestation was the most acceptable one. When the incision was made down to the tumor, it was noticed that the knife cut down upon the growth at the lower angle of the incision, no peritoneum existing at this locality, but on extending the cut upwards a peritoneal layer over the growth was discernible and on opening this layer the intestines were seen lying loose above the growth. This at once convinced us that the tumor was extra-peritoneal, or in other words in the leaflets of the broad ligament. Now the difficult part of the operation began; the tying off and separating the omental adhesion was a slight task as it was adherent only in one place, but the entire capsule had to be tied in sections in order to remove the sac from its imbedded position in the pelvis. This could be done only by pushing a hemostat under a small section of this vascular membrane and tying it in sections by pulling a ligature (silk) through the opening made by the forcep, and tying it tightly. This tying and cutting process had to be carried around the middle of the tumor. On the upper and posterior aspect of the growth an intestine was found attached to the tumor for a distance of nine inches; this was brought about by the mass, as it had ascended out of the pelvis; stripping the peritoneum from the posterior wall of this cavity and separating the layers of the mesentery up to the gut by the same gradual process that had early in the pregnancy pulled apart the two layers of the broad ligament.

After making a complete circuit of the growth, the tumor was easily lifted from the bottom of the pelvis; this locality did not require a single ligature. During the

Mrs. S., four weeks after operation forextra-uterine pregnancy.

operation at one place on the tumor at the side next to the uterus (which was located as we had diagnosed) some very large vessels (arteries) were noticed, and at this same locality muscular tissue (Fallopian tube) was discernible. The tube at this location was evidently spread out and lost in the walls of the growth. Some remains of the organ of Rosenmüller could be plainly seen at this same location. At the left side of the uterus near the tubo-uterine junction the peritoneum was so firmly attached to the uterus that the organ was cut into and gave rise to considerable hemorrhage; this was controlled by a stitch or two and the membrane divided at a greater distance from the uterus. After the growth was removed the uterus was examined and found to be a *little large* with a sound tube and ovary on the left side, with the remains of a ligatured tube on the right side. The bottom and sides of the pelvis on the right side were stripped of peritoneum. The ureter and uterine artery could be distinctly felt immediately under the finger on that side. The bleeding from the surfaces was quite profuse but not alarming and was easily controlled by hot water. *Irrigation* and *drainage* used. The operation was a

long one but the patient left the table in good condition and two hours later had a pulse of 80. On examining the mass after its removal a full formed eight pound child was found in its interior. The sac surrounding the child had compressed it until the anatomical landmarks used in diagnosing pregnancy by palpation were completely obliterated —every nook and corner of the sac was filled with baby and placenta. The placental site was at the top of the sac, the cord down over the left eye of the child. The face of the child was turned to the mother's right side, the left shoulder and side of the face were the pelvic presenting parts. The body was strongly flexed, the feet being above the head, the breech pointing to the mother's right side.

The child had a complete envelope of its own and was beyond doubt primarily a tubal pregnancy which had ruptured into the broad ligament and in this location the child had continued to grow up to full term. The child then or soon after dying, remained encysted up to the time of operation.

The child was as well preserved as though it had been in a specimen jar of a well kept pathological museum. The liquor amnii had been absorbed; a small amount of meconium was found in the sac. No lime salts had been deposited in the child or its envelopes.

These cases are rare; a record of a case in the museum of the College of Surgeons of London says the child was retained for fifty-two years and was found to be as fresh and unaltered as a newborn child. In this case the specimen was removed postmortem.

I report this case in full because of its interest from a diagnostic and pathological standpoint. The steps of the operation and the results make it a unique case (barring the case referred to by Thornton, Trans. Obst. Soc., Vol. xxiv, p. 81).

The sac, placenta and child were removed without opening the envelopes. The cases (except the one referred to by Thornton) heretofore, as far as I have been able to find out, have been treated by opening the sac, stitching it into the abdominal incision after removing the contents either in part or in whole.

This was originally beyond doubt a tubal pregnancy, and the manner in which the child reached its new location and continued to thrive and develop is certainly understood by any one acquainted with the anatomy of the mesosalpynx and its relation to the Fallopian tube. The rupture, which must have been a gradual one, took place early in the development of the embryo and on the under side of the tube, the fetus being gradually extruded or growing in the direction of least resistance descended between the leaflets, until it reached the floor of the pelvis.

She evidently had a hemorrhage about the tenth week; this bleeding was controlled by the pressure exerted by the broad ligament. The front and back layers becoming more and more distended by the growth of the child until on the right side the pelvis was robbed of its peritoneum, the bladder and part of the rectum also being denuded of this membrane. The remains of the tube were spread out over the sac thus assisting the broad ligament in roofing over the fetal membranes and their contents. The tubal mucous membrane plays a very trifling part in the forming of the placenta in ectopic gestation. The placenta in these cases is derived almost entirely from the fetal structures.

The villi are developed early on the outer side of the ovum and receive the blood from the allantois. These villi insinuate themselves into the folds of the tubal mucous membrane. With the growth of the ovum these villi increase in number and size, the mucous membrane becoming thinner as the tube dilates and less and less of this structure in any one locality enters into the make up of the fetal attachments, so that ultimately the placenta when formed is, strictly speaking, made up only of fetal structures. In the case just referred to the placenta was situated at the upper side of the child and was pushed well up into the abdomen. This locality presents the most unfavorable site for the placenta to grow and nourish the child. Hemorrhages are more likely to occur in the latter months if the placenta is located above the child. This is due to the constant stretching of the peritoneum, producing a partial separation of the placenta the same as takes place in placenta prævia. At the time of operating more danger is encountered from hemorrhage and wounding intestines if the placenta is situated above the child.

ECTOPIC PREGNANCY: ITS COMPARATIVE SYMPTOMATOLOGY AND TREATMENT.

Read before the Section of Obstetrics and Diseases of Women at the Forty-fourth Annual Meeting of the American Medical Association.

BY JOSEPH HOFFMAN, M.D.
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Amid the conflicting claims as to the positive or presumptive symptomatology of ectopic gestation, the candid inquirer may very justly pause to join with another who long ago exclaimed: What is truth? In these days when hastily written reports are hurried into press, not to increase the general fund of information on a given question, but to call attention to the existence of the writer, too great care can not be taken to discriminate between opinions that come of experience, either practical or critical, and those that arise from accidental contact with cases of a certain class, not before met by the reporter, who consequently hastens to record his unique diagnosis and procedure, taking it for granted that his case is typical, and that his knowledge of the matter is therefore all-embracing and positive.

Nowhere is this aspect of affairs more urgent than in the advanced abdominal surgery of to-day. Opinions are held, stands are taken, contradictions are given to experience and logically adapted procedures, by those who have neither experience, nor the judicial mind to weigh the value of differences, failing in which their claims are ridiculous to those who know them, and terribly misleading to those confiding in them. Surgical results are not to be expected from neophytes or pretenders; neither from the results or claims of these are deductions to be made, except to mark their disastrous work as the shoals upon which life is lost and real surgery wrecked. At the beginning of our inquiry we are met with many difficulties arising, in addition to such as those cited above, from the fact that men in whom by name and reputation we are led to rely upon, are so widely at variance in reference to their expressed views relative to the diagnosis of ectopic gestation. So far as diagnosis is concerned, the term may be almost used synonymously with symptomatology, for upon the latter the former must depend, so that when we find a writer holding that there is a positive chain of symptoms, or a set of symptoms, in connection with which a physical examination will or will not point to the presence of ectopic pregnancy, we will find that he will also claim his ability to diagnosticate the existence of the condition. Winckel for instance, whose experience up to the writing of

his late book on obstetrics records an experience of thirteen cases, claims that the diagnosis is not so difficult, and substantiates his claim by the assertion that he had proved his diagnosis, either by the elimination of fetal parts or by autopsy. It may be here premised that a diagnosis that is made either by postmortem or by after-discharge of fetal bones, is scarcely to the purpose, and while valuable as pathological records, have no value from a surgical point of view, except to condemn and repudiate the reasoning that allows such procrastination with its unfavorable and unfortunate results. The misfortune is that those who most widely argue the possibility of exact diagnosis, have had the least, and in many cases the most meager, abdominal experience. They believe that it is possible to say positively that this or that swelling is the result of an ectopic gestation, because they do not understand the various train of pathological conditions that have their manifestation in pelvic fullness, tenderness, throbbing and the like. Failing to appreciate the multiplicity of such disorders, they naturally lay especial stress upon that which they are looking for, and accordingly find what they are seeking, not on account of their superior knowledge, but because of their greater inexperience. If it be true, as is generally acceded, that most of us make a diagnosis by exclusion, it stands out clearly that the less we have to exclude, the sooner to us is a diagnosis possible, or clear; hence we find that men who claim a positive symptomatology in this condition, are constantly making extreme errors, of which we only hear by accident, and when discovered, are explained away by the assertion that such errors were made by the unusual complications existing, when it is plain to the more experienced gynecologist, that this apparent exception only proves the rule, for in ectopic pregnancy the unexpected is always happening, and is at the bottom of all the discrepancies of opinion concerning it, where any experience has width sufficient for latitude of expression. If any one of us sets out with the idea that, given a certain train of symptoms, pointing in the main to an ectopic pregnancy, this is infallibly present, of course the diagnosis is always made; when it is missed the case is not reported. It will thus be readily understood that the impression of exact and uniform diagnosis is a totally unfair one, and that it is not at all to be relied upon. The trouble is, therefore, in the experience of the diagnostician as an operator. Theoretically the distinction between pregnancy natural, and pregnancy ectopic is so wide that only a fool could be deceived. Practically we know that often a most careful examination in the simplest cases can not decide the matter. Now when this is true of uncomplicated conditions, the difficulty at once increases in a geometrical ratio in complicated ones. We must remember that pregnancy, whether intra- or extra-uterine, is not the only condition that causes enlargement, swelling and softening of the uterus. All these conditions are simulated by totally variant causes, having nothing at all to do with gestation in any form. If now we go on to the other recognized symptoms, such as suppression of the menses, irregular periods, nausea, swelling of the breasts, we shall find that all of these are simulated in miliary disease of the ovaries, and that in addition there is here an ectopic swelling, lateral or retro uterine, with tenderness and throbbing, totally misleading except in the unmarried, while in other cases, only the probability is diminished, and the diagnosis is not certain. In these cases, too, another misleading feature is the uterine discharge, for this is so irregular that it will be impossible for the most careful observer to decide positively whether the decidua has been expelled or not. To cap all, the temperature is misleading. Nor is this the only perplexity, for the size, softness, and appearance of the uterine structure, all suggest pregnancy. Running parallel with these symptoms, are those of the stomach, than which nothing can be more capricious, and taken together with the frequent abdominal tenderness, often amounting to well developed attacks of peritonitis, the symptomatology of ectopic gestation is so near complete, that nothing farther in the majority of cases would suggest itself. Probably the most misleading cases of all, are those in which there is ectopic, complicated by pelvic tumor of another sort, or where there is true pregnancy, with pelvic inflammation, tubal or other, or where both intra- and extra-uterine pregnancy are associated. The operator who has met these conditions, can always be relied upon to confute the vaunted easy diagnosis. As I have before noted, theoretically the diagnosis is easy to differentiate, while practically, it is most perplexing. A case of my own may be here cited with profit. A woman thirty years old, one child eight years old, never after pregnant. Menstruation not missed, was taken with violent abdominal pains, with some discharge. Examination revealed a uterus slightly enlarged, so far as could be distinguished, through thick abdominal walls. The lateral tenderness was especially marked on the right side, and the whole abdomen was tender and swollen. The bowels were freely opened, but in spite of this, the pain, swelling and rise of temperature continued. The odor of the discharge was distinctly placental. Operation was decided upon, with diagnosis of ectopic pregnancy. The condition revealed was double sided pyosalpynx, and peritonitis, combined with pregnancy, which indeed was so obscure as to be questioned by my assistant, who being present will no doubt refer to the case. The appendages were angrily inflamed, and nothing was to be done except to remove them. The woman made a good recovery, in spite of her miscarriage four days after operation. There will no doubt suggest themselves other steps, to have confirmed or negatived the diagnosis, but these may be noticed in the discussion. The diagnosis of ectopic pregnancy in the presence of fibroid tumors of the uterus, is an exceedingly interesting topic. Strahan makes the exceedingly naïve criticism that it is hard to understand how with bi-manual examination, and a little common sense and prudence, a mistake could be made between the early stages of extra-uterine gestation and a small fibroid of the uterus. But the matter can not be thus lightly dismissed. The poet has it, that

> "Experience joined with common sense
> To mortals is a Providence."

The common sense may be of the best, but if the providence be not present in the shape of experience, alas for diagnosis. Not only may an intra-mural fibroid simulate an interstitial pregnancy, without pregnancy, but it may produce abortion in natural gestation, and afterward, the tumor still persisting, may simulate an interstitial ectopic pregnancy. The simulation is all the more complete, because mam-

mary symptoms, hemorrhage, and uterine spasm, all combine to mislead the physician. Pregnancy in a fibroid tumor, which, after conception has taken on a rapid growth, when the portion of the uterus containing the fetus is posterior or lateral, or after the fetus has died, may puzzle the most skilful diagnostician. Not only are the cases in which true pregnancy exists thus found to be difficult of diagnosis, but a second class of cases arises, in which there is no pregnancy at all, but ectopic is speciously simulated—to-wit, in dermoid and ovarian cysts. Ovarian cysts have again and again been diagnosticated as ectopic pregnancies, while dermoid tumors even after removal in postmortem examination have been recorded as such, as is instanced in Campbell's "Memoir on Ectopic Gestation." A case of ectopic gestation on one side with a dermoid tumor on the other side of the pelvis has come under my own notice for operation, and it will be readily understood how a more misleading state of affairs could hardly exist. If the dermoid contain fetal bones, and other débris, digital examination may do little more than perplex. In these cases miscarriage after miscarriage is apt to supervene, and the tumor persisting, after the discharge of placental débris, as is a common occurrence in ectopic gestation, the diagnosis is easily reached of ectopic pregnancy. One such case has come under my care, in which the diagnosis of pelvic tumor was made, but from my present knowledge of the subject I could hardly escape the suspicion of ectopic gestation, and suspicion in these cases often is the sum total of diagnosis. In any pelvic tumor, where suspicion points to ectopic pregnancy, I take it that operation should settle the diagnosis in competent hands. Where the growth has been rapid, it does not necessarily follow that the case is one of ectopic pregnancy, for fibroids may take on an almost mushroom celerity of growth, and the same is true of cancerous disease. In the latter condition, however, cachexia is an almost unfailing symptom which should be a great aid in differentiating it from ectopic pregnancy.

Diagnosis.—We have now reached a position where an opinion as to the merits of positive diagnosis may be reached. We may say, then, that here we have a disease in which the probability of its presence can often be safely affirmed, after certain periods; first after rupture; second, after the fetus has become viable; third, in the presence of discharging fetal remains either through bladder, rectum, or umbilicus. It is almost ridiculous to consider the last condition under the head of diagnosis. As to the diagnosis previous to rupture, since a majority of cases are called to our attention subsequent to rupture, and since it is the rupture that attracts attention to these cases, it follows that if a diagnosis is made, it must be in the minority of cases. The simple fact that of all ectopic pregnancies so few come under observation for treatment or examination, unless we except the so-called electrical cures, must of itself stand a challenge that there are any symptoms which are so peculiar as to excite the attention of the women in which the accident occurs. When even rupture occurs, most women consider that they have an attack of colic and when the decidua is passed, they regard it as a miscarriage. That itself may be a most misleading symptom to the physician. The diagnosis therefore of the remaining cases, is best considered from the standpoint of the symptomatology, to which we have already devoted considerable attention. To repeat, the diagnosis must be after the conclusion that a pregnancy exists. First in these cases, we must say that the symptoms are those of ectopic gestation, for be it remembered, normal pregnancy must be excluded.

Winckel's assertion that ectopic gestation is more readily diagnosticated than the normal condition is one that is safely left with himself. It is hardly worth while to dispute it. The misfortune is that this German author claims a position which I, for one, hesitate to assign him. His abdominal experience does not justify his sweeping statements in diagnosis. If from the date of a supposed conception, of sexual congress, in cases whose exact pelvic condition was previously known, we could have our patients constantly under observation, there is no dispute that pregnancy if it occurred, whether ectopic or normal could be diagnosticated. But this status of affairs is for the most part impossible and can not enter into our calculations. In the cases therefore that come under our hands for diagnosis, previous to rupture of the ectopic cyst, all the contradictions and variations in the symptomatology noted above, must be accounted for, and the greatest latitude allowed for irregularity in symptomatic expression. In a patient of my own, suffering with frequent miscarriages, I found the following condition: Taken with a sudden attack of pain she resorted to ordinary remedies. I saw her a few hours after the attack. She had complained of antecedent pain on the right side. Her catamenia had failed for two months. When I saw her there was a slight show of blood, and she was in collapse. She had done a large washing during the day upon the evening of which I was called to her.

Treatment.—After the futile resort to mere experiment in dealing with this dread disease—delay, puncture by electricity, electricity without puncture, and puncture with injections of morphine, still with their advocates—I can do no better, nor pay a more fitting tribute to our Stephen Rogers, who rising above, before the recognition of the possibilities of abdominal surgery, and cleaving with an inspiration of surgical good sense, the superstition of the accepted fatality of this disastrous accident, enunciated his belief in these words:

"*The peritoneal cavity must be opened; the bleeding vessels must be ligated.* He, indeed, must be a madman who under such circumstances would neglect anything in his power to secure the chances such an operation would afford of saving the life of his patient."

THE ELECTRICAL HORSEWHIP.—It seems doubtful whether objection can be brought against the latest form of horsewhip, which is constructed so as to give a slight electrical shock to the animal. The handle, which is made of celluloid, contains a small induction coil and battery, the circuit being closed by means of a spring push. The extremity of the whip consists of two small copper plates insulated from each other, each of which is provided with a tiny point. The plates are connected with the induction coil by means of a couple of fine insulated wires. As a means of surprising a sluggish animal into doing his best work without the infliction of physical pain the electrical horsewhip will by many be hailed with gladness.—*Hartford Times.*

METHODS OF REMOVING THE UTERUS FOR UTERINE FIBROIDS, WITH REPORT OF CASES.

Read in the Section of Obstetrics and Diseases of Women, at the Forty-fourth Annual Meeting of the American Medical Association.

BY J. N. MARTIN, PH.M., M.D.
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Notwithstanding the free use of drugs, such as ergot, cannabis indica, etc., in various ways, and notwithstanding the persistent use of electricity with all of the modern appliances, there are many uterine fibroids that are but slowly or slightly altered for the better; and a large number continue to grow with increasing deleterious results, despite the use of these agents.

This leaves a large and, as I have found from experience, a difficult field for surgical work.

This short paper is devoted exclusively to the practical surgical side of some methods of removing the uterus to get rid of these perplexing growths.

These methods in their different phases I will illustrate briefly with cases, that I may show more clearly why we adopt different lines of procedure in operating upon this class of patients, and also to demonstrate that it is difficult or impossible to formulate a definite plan of action in some until the operation is already begun and we can see the intra-abdominal relations of the tumor.

I believe that a tumor causing sufficient trouble to warrant a laparotomy is so far incorporated with the uterine walls, as a rule, as to necessitate the removal of the uterus.

Rarely, we find a simple case—a sub-peritoneal tumor with loose attachment that can be easily removed. It has not been my good fortune to meet many such easy cases.

In many cases it is best or necessary to remove the uterus with the tumor. This is the great and difficult field for surgical work in dealing with uterine fibroids. It includes the large ones, the multiple ones, the fibro-cystic ones, the complicated ones and nearly all of those that are death-dealing to our suffering patients—if they are not removed by surgical means.

It requires more nerve and more skill to deal with them properly than is required in almost any other field of surgery. The operation in the beginning may be comparatively easy, and before completion be prolonged into hours of the most careful, skillful, difficult and nerve wearing work imaginable. One who has entered this field realizes this fully, and one who contemplates crossing its threshold should be prepared to meet all the complexities that the worst case presents; for such he may find his first case to be, before his operation is successfully completed.

Some of the most troublesome fibroids to deal with are the intra-ligamentous ones that unfold the broad ligaments, displace organs, and are prone to form numerous and large adhesions. My experience with these teaches me that they are very vascular from original attachment and from vascular adhesions; that they grow more rapidly and cause more pain.

In some cases the difficulties in treating these surgically are almost insurmountable. I begin the operation after abdominal incision by incising the peritoneum over the tumor from side to side, and then strip it down anteriorly and posteriorly with my hands and turn the tumor out slowly, ligating and cutting adhesions; being sure to ligate the ovarian and uterine vessels and then sever as much of the broad ligament as is necessary to liberate the tumor and tumor side of the uterus. After the tumor is liberated, except the uterine attachment, pull it up and toward the side on which it developed; then proceed to ligate the ovarian vessels on the opposite side and cut the ligament under the tube and ovary, preventing reflux with long forceps, à la Baer.

Afterwards ligate the uterine vessels, then strip down the peritoneum in front and behind the uterus, being sure to incise it across, a little above the bladder (an inch or so); about the same or little lower behind. The next step will depend upon the condition of the patient, the relation of the tumor to the lower zone of the uterus and the cervix, and how certain I feel concerning the control of the hemorrhage. If I feel sure there is no danger of hemorrhage, I cut away the uterus and tumor without the elastic ligature or serre nœud, provided the tumor is high enough for a pedicle below it. If I fear hemorrhage, I apply the serre neud and test the condition. If there is some oozing, tighten the serre neud slightly, trim the stump with wedge-shaped cavity, leaving two flaps which are coapted with deep interrupted catgut sutures and the peritoneal edges with superficial catgut sutures, and then remove the serre nœud.

Before coaptating the flaps, I cauterize the cervical canal and fill it with iodoform. In the last case I passed iodoform gauze through the cervical canal, and left the end loose in the vagina.

If there is still oozing after flaps are united by sutures, pass deep ligatures around the outer fourths of the stump and tie. Then drop the pedicle back and unite the anterior and posterior folds of peritoneum with catgut sutures to insure against the intestines dropping into the fresh wound.

If there is oozing, and the patient's condition requires speedy termination of the operation, apply the serre nœud and fix the stump in the lower abdominal wound if the pedicle is long enough. If it is not long enough, ligate the outer fourths with strong silk, or the whole pedicle, and cauterize the end of the stump thoroughly according to Dr. C. T. Parkes, and with a few stitches unite the peritoneal folds.

The following cases will illustrate these points:

1. Operated upon Jan. 6, 1892. Married twenty-two years and sterile. Upon examination a hard tumor was found filling the pelvis and extending two inches above the umbilicus. After abdominal incision, I incised the peritoneum laterally from side to side, separated the tumor and uterus from the bladder and rectum, tied off the adhesions, applied the serre nœud and removed the tumor, uterus and its appendages. At this time the patient developed unfavorable symptoms and I hastened the completion of the operation by fixing the stump in the abdominal wound. The shock proved to be of short duration; the patient made an excellent recovery and is now well and happy.

The next case was operated upon the last of February, 1892. Upon examination a uterine fibroid was found that filled the pelvis and extended to the sternum. The patient was greatly emaciated, pale and very weak. On account of the many adhesions, the operation required two and a half hours of hard work. She stood the operation fairly well, consider-

ing her weak condition, until near the close, when all but the cervical attachments were severed, and then she showed marked signs of collapse. I applied the serre nœud quickly, cut away the tumor and uterus and fixed the stump in the abdominal wound. The tumor weighed forty-two pounds and had one cyst that contained twenty-eight and one-half pounds of pus, as Prof. Gibbes' examination showed. The patient made a rapid recovery, and went home well six weeks after the operation. I believe both of these cases would have been lost by prolonging the operations after these alarming symptoms arose.

When the tumor is not intra-ligamentous and the relations and conditions are such as not to demand total extirpation of the uterus, but the cervix may be left, I remove the tubes and ovaries with the uterus as previously described.

Ligate the ovarian and uterine vessels, cut across the uterus anteriorly and posteriorly, strip down the peritoneum and separate the vesical fold and bladder, also the rectal fold; then ligate bleeding vessels and cut away the uterus and tumor, remove wedge-shaped piece, cauterize the cervical canal, dress with iodoform, coapt the flaps of the pedicle and the peritoneum, unite the peritoneum over the wound; all to be done after the same manner and with the same precautions as previously described. In all such cases, drain from the posterior cul-de-sac into the vagina with a glass drainage tube for from four to seven days.

The six cases in which the stumps were treated intra-peritoneally were operated upon May 28, Oct. 19 and Nov. 26, 1892; Feb. 18, March 11 and April 26, 1893.

The one operated upon Feb. 18, 1893, died from cerebral cause and is reported later in this paper. In the one operated upon March 11, 1893, the drainage tube came out the second day after the operation during an attack of coughing and was not replaced. This resulted in rapid closing of the opening, retention of the secretions and elevation of the temperature to 102 degrees. The tissues were separated and a rubber drainage tube was inserted and kept in four days. Seven hours after its introduction and irrigation with a sat. sol. of boracic acid the temperature was 99 degrees, and the patient made a good recovery.

The other four cases made uninterrupted recoveries.

Sometimes the fibroid forebodes malignancy or is incorporated with the uterine walls so low down as to necessitate total extirpation of the uterus. Four of my cases were such that total extirpation of the uterus was the only procedure left me.

In one case operated upon May 2, 1893, the cervix was spread over the tumor and enlarged uterus so that it did not project a .half inch from the surface of the hard mass. Upon vaginal examination a round, hard mass the size of an infant's head at birth could be felt filling the pelvis, and it extended up to the umbilicus.

Three other cases under this head which were operated upon more than a year since, Dec. 30, 1891, Feb. 17, 1892, May 19, 1892, had tumors ranging in weight from eight to over twenty-six pounds. They involved not only the body of the uterus, but the cervix as well. These were all intra-ligamentous, and were long and exceedingly difficult operations.

When total extirpation, or Eastman's method, is decided upon, I draw up the tubes and ovaries and clamp below them with long forceps to prevent reflux, tie off the broad ligaments in sections as close to the uterus as possible, being sure to ligate the large ovarian and uterine vessels with strong silk, leaving one end of each ligature long, so all of them can be brought into the vagina, and by traction on them the stumps can be turned down into the vaginal opening. Some object to this method of leaving the sutures, and I question it sometimes; but the results are good. I use long forceps along the sides of the uterus to prevent reflux from the uterus during the operation.

Before ligating and cutting the lower segments of the broad ligaments, I incise the peritoneum across the uterus in front and behind, strip down the peritoneum with my hands and blunt instrument and separate the bladder and bowel. Then perforate the vagina with forceps and incise the vault of the vagina anteriorly and posteriorly with blunt pointed bistoury or scissors, with the fingers of the left hand in the vagina to guide them, and then tie all bleeding points.

Finally, ligate the lower segments of the broad ligaments with strong braided silk (avoiding the ureters), and cut them and remove the uterus and the tumor.

In two cases I was obliged to apply the serre neud temporarily and to cut away most of the tumor and uterus before I could remove the cervices, as the tumors were so large.

After the uterus and tumor are removed, wash out thoroughly with sterilized water, draw the ligatures down and invert the stumps; dress with iodoform gauze. Unite the peritoneal flaps in the wound with interrupted catgut sutures.

If the patient's condition is bad, the operation may be shortened considerably by clamping the lower segments of the broad ligaments with forceps per vaginam and leave the forceps on a few days. Remove the ligatures when they separate, in from six to fourteen days.

Dr. Byford's method of treating the stump by vaginal fixation is no doubt good, as his results show, but I have not practiced it, and, as it has been described so often I will not repeat it here.

In all cases, the abdominal wound is to be closed and treated as in any laparotomy, and the patient is to be prepared the same for the operation, except the vaginal cleansing must be more nearly perfect.

Of thirteen hysterectomies for fibroids, two died. Of the two that died, one had a tumor that filled the pelvis and abdomen and extended up to the sternum. The abdomen was as large as a large full term pregnancy; her circumference at the umbilicus was forty-six inches. In order to deliver the tumor, it was necessary to make an incision from a little above the pubis to the ensiform cartilage and laterally through one rectus muscle. There were numerous and large adhesions binding the tumor to everything within its reach. The uterine cavity was seven inches long.

It was a long and difficult operation on account of the many adhesions, difficulty in delivering the tumor and the numerous bleeding points.

The patient died of shock the following day. This was a total extirpation.

The other patient died eight days after the operation. Everything progressed favorably for seven days, when she suddenly became paralyzed on one side, and the next day she died. Evidently a cerebral cause. The other cases have made good recoveries.

In my work in this line of surgery I endeavor to be aseptic, and to combine what seems to me the best points gleaned from observing the work of eminent American and European gynecologists who are abreast of the times.

I do not believe in any "new method," so-called, for removing the uterus for fibroids, unless it specifies the special conditions and cases to which it is adapted, for then only is it of value.

I believe there is no one method, new or old, adapted to all, when we consider present relations and ultimate results.

I approve that method with conditions favorable which leaves the cervix and its stump treated intra-peritoneally and the lower segment of the broad ligament, for the following reasons, viz;

1. It leaves a stronger floor for the pelvis, and it leaves the vagina in a better condition than when the cervix is also removed.

2. It is better than fixing the stump in the abdominal wound, as it permits of free dilatation of the bladder and there is no traction. The recovery is more rapid, as there is no sloughing mass left to separate and interfere with the healing of the abdominal incision. The operation can be completed with a shorter pedicle.

3. The vagina is left in a better condition than with Byford's method. By his method, the cervix and tissues about are twisted out of shape and a mass is left to separate. However, if this method is to be adopted it is necessary to be sure of the control of the hemorrhage, exercise perfect aseptic methods in the operation and toilet, and to be certain, drain from the posterior cul-de-sac.

Appendix.—Since writing the above, I did my fourteenth hysterectomy, May 23. There were seven fibroids attached to the uterus, ranging in size from a hen's egg to an infant's head. The entire mass was wedged tightly into the pelvis. The patient is making an excellent recovery.

PORRO-CÆSARIAN SECTION.

Read in the Section of Obstetrics and Diseases of Women, at the Forty-fourth Annual Meeting of the American Medical Association.

BY J. H. CARSTENS, M.D.

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Having had the pleasure of reporting a successful Porro-Cæsarian section in the *American Journal of Obstetrics* last year, it is peculiar that I should be able to report another case within six months. The second case is as follows:

Mrs. S. is 23 years old; her mother died of pneumonia at the age of 55; her father is living and healthy; she has two brothers and three sisters living; one of the latter had six children, the other had five. They were always delivered by a midwife. Mrs. S. is of German parentage, but was born in this country. In the fall of 1891, I was called upon by Dr. W. J. Brand to help him deliver her. She had been under the care of a midwife for twenty-four hours when he was called, and failed to deliver her with forceps. As the child was dead the only thing to do was to perform craniotomy. Even after craniotomy it was quite difficult to deliver on account of the narrowness of the pelvis. When this was finally accomplished I took careful internal measurement with the pelvimeter and found an antero-posterior diameter of less than three inches. She made a slow but good recovery. We told her that if she ever became pregnant again that it would be necessary to bring on a premature labor. She was very anxious to have a child and did not think that a seven months child would live, although told of the danger and need of Cæsarian section if she went to full term. She kept very quiet when she again became pregnant and only told Dr. Brand two weeks before her expected time. It was then too late and we made all preparations to take her to the hospital as soon as labor should set in.

September 24, 1892, she was taken with labor pains, so we took her to Harper hospital in the ambulance at 8 P.M. I wanted to wait with the operation until in the morning, but found that the cord was presenting and being afraid that compression might kill the child before morning I decided to operate immediately. She was prepared as for any abdominal section and I operated at 9. P.M. in the presence of many physicians of this city. The bag of waters was first ruptured and then the usual incision was made. The uterus was rolled out à la Müller, an elastic ligature applied, then the uterus quickly opened and the child weighing 8 pounds removed. I was undecided to do a Porro- or a so-called classic Cæsarean section. All the physicians present were unanimous for the Porro, hence I applied a clamp. I removed the uterus, tubes and ovaries. The after treatment was like any other coeliotomy and her recovery smooth, as the Germans would say. She nursed her child from the first and left the hospital twenty-five days after the operation. To-day she is the picture of health, as well as her child.

The only question in my mind is, whether we should do a Porro or preserve the uterus? If the child had been dead I would have done a so-called classic Cæsarean section. Still the life of one child always hangs on a thread and her future chances for motherhood are destroyed in my patient. What shall we do? If we preserve the generative organs, the woman will again and again become pregnant and she must be repeatedly subjected to the most critical operations of surgery. Is this right? Is it desirable to propagate the hereditary tendency? The moral questions involved are still in doubt in my mind, hence I wish a thorough discussion by the able members present.

You will, of course, see that I am inclined to the Porro because: 1, it can be quickly performed. 2, it is less dangerous. 3, the woman's future is free from such dangerous operations.

THE CAUSATION OF THE DISEASES OF WOMEN.

Read in the Section of Obstetrics and Diseases of Women, at the Forty-fourth Annual Meeting of the American Medical Association.

BY CHARLES P. NOBLE, M.D.

PHILADELPHIA.

Within recent years activity among gynecologists has taken the form of improvement in the technique of operations; and as an outgrowth of the large number of operations which have been performed, the pathology of diseases of women has likewise been improved. Comparatively little has been written concerning the causation of the diseases of women, although the subject is one of great importance, in view of its bearing upon preventive medicine. Only as the causes of disease are made known to the profession at large, is it possible to take measures for their prevention. And in gynecology, especially, prevention is far better than cure.

The principal causes of the diseases of women are:

1. Imperfect development of the sexual organs.
2. Gonorrhea.
3. Septic inflammation following child-birth.

4. Lacerations due to child-birth.

5. Miscellaneous causes, including constipation, erroneous habits of life, and errors of dress.

1.—*Imperfect Development of the Sexual Organs.*—The influence of imperfect development of the sexual organs as a cause of diseases of women, cannot well be over-estimated. At the present time not so much is said of the influence of this factor in producing disease, because it has been more or less lost sight of since tubal and ovarian pathology has so much occupied the attention of gynecologists. The experience of every observant practitioner demonstrates the prevalence of imperfect development, and also its influence in producing various diseases of women. As a rule, when the development of the sexual organs is arrested, the development of the body, as a whole, is also interfered with. Such women, almost without exception, belong to the class of neurotics, and they are especially liable to all manner of neuroses, including, especially, chorea, headache and neuralgia. The most striking signs of this condition are the late development of puberty, the imperfect and painful character of menstruation, and the fact that the history of semi-invalidism, almost without exception, can be obtained. Puberty is often delayed even as long as the eighteenth or nineteenth year or longer. Menstruation is always painful. The pain belongs to the type of so-called ovarian dysmenorrhea; that is to say, it begins one or several days, or even a week, before the menstrual flow, and is felt especially in the ovarian regions. Reflex neuroses are common accompaniments, especially headache, disordered digestion, or even sick headache. Uterine dysmenorrhea, due to the undeveloped condition of the uterus (especially of the cervix) which is in general sharply anteflexed, is frequently present. This is indicated by its paroxysmal character, and by the fact that, as a rule, it is much less marked after the flow has become fully established.

The reason why the development of the sexual organs of girls becomes arrested is not absolutely demonstrated. The influence of modern education as a cause has been much dwelt upon, and the evidence in support of this theory is very strong. The effect of the crowded courses and frequent examinations in our schools in developing the nervous system at the expense of the rest of the body, and later in breaking down the tone of the nervous system through over-work, has been abundantly proved. The emotional side of the female character likewise is stimulated. As a result of these conditions the digestion of growing girls is apt to become deranged, and their sleep likewise to be disturbed. As a further consequence anemia and depraved nutrition follow, aggravating the neurotic conditions already engendered and thus completing the vicious circle. When such girls arrive at the age of puberty, especially if at the time they are being crowded with a multiplicity of studies to enable them to enter a fashionable finishing school, the demands upon the nervous system to enable them to accomplish their tasks are such that the processes which are necessary to bring about the proper development of the sexual organs are not brought into play—enough vital force is not left over to accomplish this result. The testimony of urban practitioners is unanimous upon this point, hence it must be considered as established that too great mental occupation directly hinders the development of the sexual organs. And not only that, but at the same time breaks down the tone of the general nervous system.

Other causes, however, must be considered. Some of the most marked cases of arrested development of the sexual organs which have come under my notice have been among the poor. These girls not only had not been forced at school, but in not a few cases they had never been to school. In some of them it seemed to me that the cause was too early and too laborious work, especially in mills. I have had numerous patients among mill operatives who had gone to work as children in mills, and who had worked full time during the years when the greatest development takes place. In these girls it was probable a lack of fresh air, of out-of-door exercise and of an abundance of nutritious food, together with too much work that was at the bottom of the difficulty. A curious class of cases but little understood is that in which extreme corpulency is present. I have seen numerous cases in which menstruation was tardily established, never perfectly performed, and which ceased or became scanty and irregular between the twentieth and thirtieth years. Whether the imperfect character and early cessation of menstruation was due to obesity, or whether the obesity was due to the absence of menstruation I have never been able to satisfy myself. However, my own experience fully confirms the current opinion that obesity bears a certain relation to scanty and imperfect menstruation. The development of the sexual system in women is one of the mysteries of nature and the exact forces which bring it about will probably never be perfectly known, but it is rational to believe that the existence of good health about the time of puberty has much to do with its proper development. The care of growing girls, particularly between the age of nine and sixteen years, is a subject of the utmost importance, and the profession has no more urgent duty than to instruct mothers concerning the importance of the proper care of girls during that period. Girls who are inclined to be neurotic, and whose digestion and nutrition are at fault should not be treated in the same way as their stronger and more phlegmatic sisters. Their duties at school should be lightened, they should be more in the open air, and any functional disease which may exist should be cured. In this way some surplus vital force may be stored up to be called upon when necessary in the development of the sexual system. Also, when menstruation fails to appear at its accustomed time special care is necessary. It is at this time that therapeutics has the best opportunity to influence the patient. The health of all such girls should be carefully inquired into and all indications for treatment should be met. In particular, the administration of iron, arsenic and strychnia, and out-of-door exercise are to be commended. Such cases should not be lost sight of until menstruation is fully and perfectly established. I feel confident that if this plan be carried out, there will be fewer cases of dysmenorrhea and sterility upon the one hand, and of laceration of the cervix and perineum upon the other, and also fewer cases of chronic ovaritis and ovarian cystomata. I have purposely not made mention of the higher grades of imperfect development, and of the cases in which one or more of the sexual organs are entirely absent. These cases belong to a different category, from the standpoint of practical medicine.

2. *Gonorrhea.*—The fact that gonorrhea is a dis-

ease of women has, of course, been known for centuries, but a full knowledge of the course and results of the disease is a matter of the immediate present. Bernutz was the first author who had a proper conception of the disease, (about 1850). His knowledge was acquired as most of the exact knowledge of medicine has been acquired, by the postmortem study of cases. As physician to the Lourcine hospital, where he had a large venereal service, he had ample opportunity to study the disease. In his analysis of the ninety-nine cases of pelvic-peritonitis, upon which he bases his exposition of the subject, he gives as a cause of the condition, gonorrhea in twenty-eight cases.

Forty-three are considered to be puerperal, twenty menstrual and eight traumatic. Of the remaining twenty-eight non-puerperal cases there can be no question, when reading his report in the light of modern knowledge that almost all of them were gonorrheal. Bernutz, who was a very careful and accurate observer, cautions his readers against drawing the conclusion that so large a proportion of cases of pelvi-peritonitis (inflamed tubes and ovaries with secondary peritonitis) are gonorrheal in origin. He states that in his opinion the reason why this proportion existed in his cases was owing to the character of the hospital in which they were observed. Bernutz fully recognized the fact that gonorrhea not only involves the vulva, urethra, vagina and womb, but also the Fallopian tubes, the ovaries and the peritoneum. He reports numerous cases amply demonstrating these facts and treats the entire subject in a most intelligent manner. His observations, however, failed to make much impression upon the profession and it was not until Noeggerath, in 1873, published his paper on "Latent Gonorrhea in the Female Sex" that attention was called to the very serious ravages of gonorrhea in women. Prior to that time gonorrhea was looked upon as a mere trifling vulvo-vaginitis, of importance principally because of the fact that the disease might be communicated to men. The views of Noeggerath encountered much opposition and their spirit was not fully accepted until their truth was demonstrated by the work of the modern abdominal surgeons. It is now fully established that gonorrhea is one of the most important causes of uterine, tubal, ovarian and peritoneal inflammation. Exactly what percentage of cases of inflammation of the uterine appendages is due to gonorrhea has not been determined, although unquestionably the percentage is not inconsiderable. The opinions and experience of surgeons differ widely with reference to this question; and there is good reason to believe that the percentage depends upon the character of the community in which the surgeon resides. Urban communities containing large numbers of the poor and the vicious, and of the rich and immoral, undoubtedly have a higher percentage of cases due to gonorrhea than rural communities having a more decent population.

3. *Septic Inflammation following Child-birth.*—The results of septic infection in child-bed have been so prominently dwelt upon since the days of Oliver Wendell Holmes and Semmelweis that one can not, at this time, hope to offer any new ideas upon the subject. Increasing experience only serves to demonstrate the serious results of this accident. It is unnecessary to refer here to fatal puerperal septicemia. We shall concern ourselves only with those cases which have not had a rapidly fatal termination, and which concern the gynecologist as much or more than the obstetrician. Septic vaginitis, endometritis and metritis are well-known forms of puerperal inflammation. They frequently persist and require treatment after the puerperal period. Aside from the rapidly fatal cases, the most serious result of septic infection during labor is the spread of the septic inflammation to the uterine appendages, giving rise to salpingitis, ovaritis and peritonitis. This condition probably at times ends in perfect recovery. More usually it results, either in chronic inflammation of the appendages with the formation of adhesions to the neighboring structures, or in collections of fluid—serum, blood or pus—in the tubes or in the ovaries. The relative frequency of puerperal septic inflammation and of gonorrhea as the cause of inflammation in the uterine appendages is a mooted point. Most surgeons believe that the puerperal inflammation is by far the more frequent cause; others hold that gonorrhea is the more frequent cause, and they point out that inflammation of the uterine appendages following labor need not necessarily be puerperal in origin, because the puerperal inflammation itself may have been set up by a preëxisting gonorrhea. That this last claim is to a certain extent a valid one my own experience tends to show; but many accurate observations must yet be made before it can be determined with what frequency existing gonorrhea is the cause of inflammation in child-bed.

Another, but far less frequent result of puerperal infection, is acute inflammation or abscess of the broad ligaments—acute puerperal cellulitis and true pelvic abscess. Inflammation of the connective tissue of the broad ligaments formerly was believed to be the common form of puerperal inflammation outside of the womb; but when abdominal surgeons proved that what had been called *chronic cellulitis* in the *non-puerperal* state was in reality diseased uterine appendages, the tendency was to take extreme ground and to deny the existence of *acute puerperal* cellulitis and true pelvic abscess.

In addition to the varieties of puerperal inflammation described we have cases of phlebitis, and its associated condition, *phlegmasia alba dolens.*

As already remarked, it is not positively known what percentage of cases of tubo-ovarian inflammation is due to puerperal septic inflammation; but it is known that the percentage is a high one. Gonorrhea and puerperal sepsis together cause 95 per cent. of all cases of tubo-ovarian inflammation. The importance of this fact from the standpoint of preventive medicine can not be over-estimated. And the same is true of the curative treatment of gonorrhea and puerperal septicema. If both these conditions were treated early and vigorously, and if the treatment were continued for a long time, until the gonorrhea was cured, and the results of the puerperal sepsis removed so far as possible, there would be far fewer cases of chronic pelvic inflammation. Under the present methods of practice it is the disease which the gynecologist is called upon most frequently to treat.

4. *Lacerations due to Child-birth.*—Lacerations due to child-birth constitute an important class of the diseases of women. The relations of lacerations of the cervix uteri to sub-involution of the pelvic organs, especially of the womb, and to endometritis, has

been made known through the labors of American gynecologists, especially Dr. Emmet. For a time after the observations of Dr. Emmet were made public there was a tendency to magnify the importance of lacerations of the cervix, and succeeding that, a reactionary tendency to make light of the importance of this lesion, but the conclusion of the entire profession, based upon experience and common sense, practically supports Dr. Emmet in his original teachings concerning this lesion. It is not my purpose here to discuss the causes of lacerations of the cervix further than to say that my own experience is in accord with those who believe that many cases of lacerations of the cervix are directly due to the fact that the pregnancy has taken place in an imperfectly developed womb—the imperfect development being most marked in the cervix. Such a womb and cervix are not fitted to pass through the ordeal of labor unscarred. The cervix has to bear the brunt of the battle, and as a result of its imperfect development lacerates instead of dilating. This fact emphasizes the great importance of securing a full development of the womb.

Lacerations of the pelvic floor are of even more importance than lacerations of the cervix uteri. The giving way of the pelvic floor (the laceration of the levator ani and the pelvic fascia) is the foundation of almost every form of prolapse of the pelvic viscera. Cystocele, rectocele and prolapsus uteri are due almost without exception to lacerations of the pelvic floor.

5. *Miscellaneous Causes.*—Constipation plays an important rôle in the causation of some of the diseases of women. The fact that women very frequently suffer from constipation is well known. This is as true of young women as it is of their older sisters. Probably the principal reason for this is the in-door, rather inactive life which women lead; but an important factor is the habit which so many women form of having no regular time to have the bowels move. In this way the rectum is taught to tolerate the presence of feces which accumulate until the occurrence of headache, loss of appetite, malaise (symptoms of fecal absorption), force the patient to secure a stool, either by the use of an enema or by taking a purge. This over-filling of the rectum interferes with the pelvic circulation and in this way promotes congestion of the pelvic viscera. This habit predisposes to the development of hemorrhoids, also to uterine and ovarian congestion. It is usually assigned as one of the causes of retroversion of the womb, and of prolapse of the ovaries. I believe that it does predispose to both of these conditions. The full rectum can displace the cervix forward, and straining at stool, especially if the bladder chance to be full, can topple the womb over backward. Relaxation and loss of tone of the pelvic tissues, due to congestion, also predispose to retro-displacement of the womb and to prolapse of the ovaries.

Constipation aggravates the symptoms due to every variety of pelvic disease. This is brought about, partly by inducing pelvic congestion, and partly through the deterioration of the general health produced by fecal absorption and the contamination of the blood, and by the loss of appetite and disordered digestion.

ERRONEOUS HABITS OF LIVING.

Erroneous habits of living favor the development of pelvic disease just as they favor the development of disease in other parts of the body. Pelvic disease may be produced, either by habits of indolence inducing a sluggish circulation and an atonic condition of the tissues, especially of the muscular system; or by habits of luxury, which usually involve the preceding, with the addition of irregular hours, more or less dissipation and the over-loading of the stomach with rich foods and wines; or on the other hand by too laborious and continuous work, over-taxing the strength of the individual, and by greatly increasing the intra-abdominal pressure, tending to displace downward the pelvic viscera—and in this way, at times, even in little girls producing complete prolapse of the womb.

ERRORS IN DRESS.

Errors in dress is a subject of large importance, but it is only possible here to touch upon it. The principal error in woman's dress, as arranged at present, is, that by it the waist is unduly constricted. As this is brought about by means of the corset, which not only constricts the waist, but which also constitutes a brace confining the lower part of the chest, and also the abdomen, several results are induced. The first and perhaps the most important is the interference with respiration. It has been conclusively shown that the type of breathing of the female, normally, is the same as that of the male—diaphragmatic or abdominal, but owing to the pressure of the corset the excursions of the diaphragm are limited, and the same is true of the lower ribs and of the abdominal wall. The result is that the use of the corset has changed the type of woman's breathing to the costal, or really the upper costal. The principle of accommodation doubtless largely diminishes the interference with the normal circulation which this alteration in the normal type of breathing would otherwise produce. The second result of this method of dress is to make continuous pressure upon the abdominal vessels, and thus to interfere with the return circulation from the lower half of the body—promoting congestions in this region, which includes the pelvis. The third result is the displacement downward of the abdominal viscera, causing a protrusion of the lower anterior abdominal wall, and forcing the intestines down upon the pelvic viscera. In this way the displacement of the pelvic viscera is favored. The effect of the pressure of the corset upon the muscles of the middle portion of the trunk, and the support which the corset gives in holding the trunk upright (thus doing away with the necessity for muscular action in supporting the trunk), is to bring about the partial atrophy (or at least an atonic condition) of these muscles. The loss of normal tone in the abdominal muscles changes entirely the normal condition of intra-abdominal pressure, (favoring the displacement of the abdominal viscera), and takes away from the return circulation of blood in the abdomen one factor which normally is of great assistance in forcing the blood onward toward the heart.

Another error in the present mode of woman's dress is the manner in which the skirts are fastened to the body. This is by means of bands fastened about the waist. The effect of this method is that the entire weight of the skirts hangs upon the abdomen and hips. In women having a somewhat protuberant abdomen, practically the entire weight of

the skirts is supported by the abdomen. This adds to the intra-abdominal pressure and tends to force the contents of the abdomen into the pelvis. A further bad effect is that the waist band of the skirts compresses the trunk at the smallest part of the waist and adds to the ill effects of the pressure of the corset itself.

It has not been our purpose here to discuss the subject of practical methods of dress reform, but merely to point out the ill consequences of the present mode. The principles which underlie dress reform are: 1, that the waist shall not be unduly constricted so that the circulation and respiration shall not be impeded. 2, that the trunk shall not be encased in a brace, but that the muscles of the trunk shall be called upon to perform their normal function, which includes the sustaining of the trunk upon the pelvis and legs, and their proper part in the work of respiration, and in assisting in the return circulation of the blood. 3, that the weight of the clothing shall be supported upon the shoulders. These principles are unquestionably sound, and happily, methods of dress based upon them have been so perfected that at the present time women can dress in accordance therewith and not sacrifice either taste or beauty.

Practical Conclusions.—My object in presenting this paper is not to offer anything new, but to cover in a systematic way the causes of the diseases of women in order to show their limited character, and that these causes are principally of a preventable character. If I have succeeded in doing this, it follows that if proper attention were paid by the profession to the prevention of the causes which produce the diseases of women that these diseases could be very greatly restricted.

If proper attention were given to growing girls, especially about the time of puberty, and a more normal development of the sexual organs secured, if gonorrhea were more vigorously treated, and if the subjects of that disease were kept under observation until all abnormal discharges were arrested, and proper instruction concerning the abstention from sexual intercourse were given; if antiseptic midwifery were faithfully and efficiently practiced; if lacerations of the cervix and perineum were early repaired, and if full instructions concerning the ill effects of constipation, improper dress and erroneous habits of living were given, the prevalence of the diseases peculiar to women would be very greatly restricted. I believe that this is to be the next great advance in diseases of women. Gynecologists must bring home to the general practitioner the fact that the diseases of women are largely preventable and make him feel his responsibilities, both as to their production after present methods of practice, and as to the possibilities of their prevention after improved methods. When the family physician realizes that it lies within his power very largely to prevent disease among the women of the families committed to his care, his sense of moral obligation will spur him on to do his full duty in this matter. When that day comes, the universal prevalence of disease among women will cease to be a reproach to preventive medicine.

DR. HOWARD A. KELLY of Baltimore, congratulated Dr. Noble in bringing such an important subject before the Section in a new way. He had given the subject of preventive disease in women much thought, and believed a book could well be written upon it. In many instances the cause of imperfect development of the genitals and of the general system was to be traced back of the child to the poorly nourished and ill condition of the mother before and after conception. Gonorrhea in children was not an uncommon first cause of disease in women. Tuberculosis had been found as the cause in one out of five of his operative cases of pelvic inflammation. We can not attribute too much importance to the accidents of labor.

DR. HENRY P. NEWMAN of Chicago, said that prophylaxis should have its day, and he believed it would. When we consider such a paper as has been read, we can see how easy it is to institute prophylaxis and thus prevent a very large per cent. of prevalent diseases among women.

DR. E. P. DAVIS of Philadelphia, said among the most intractable diseases of women was that of neuralgia—neuralgias not only dependent upon mal-nutrition or anemia, but especially those of the pelvic viscera as seen by the obstetrician and gynecologist. Methods of dress reform, the avoidance of constipation during the pregnant condition, as mentioned in the paper, would prevent a certain number of cases of severe pelvic neuralgia, notably those of the sciatic type.

DR. JOSEPH PRICE of Philadelphia, had found vaginitis in infancy not an uncommon cause. Gonorrhea was now a frequent source of pelvic inflammation. In alluding to menstrual disorders, he was satisfied many of them began in infancy. The general attention of the profession to vulvular and vaginal discharges of infancy was neglected. Referring to the favorable statistics of some lying-in institutions regarding the mortality from puerperal sepsis, he said they did include the mortality from other causes. In an institution with which he was connected, not a child had been lost among 1,300 births.

DR. C. R. REED of Middleport, Ohio, thought that an infantile uterus was probably one of the most important causes of illness and feebleness in the women of our country; that deranged or vicious menstruation grew out of imperfectly developed sexual organs. The most difficult cases he had to manage and which gave him the least satisfaction and benefit to the patient, were in those young women who had undeveloped uteri and ovaries. The doctor made a mistake in telling the mother it would be all right after marriage; for unless measures were taken for better development, the marriage would be sterile—the patient would suffer.

DR. J. HENRY CARSTENS of Detroit, Mich., did not believe that gonorrhea was so common a cause of pelvic inflammation as some practitioners. He thought a more frequent cause for the troubles in some women was the vicious habit of producing abortion, resulting in chronic inflammation of the uterus, and was a cause of more pelvic inflammation than all of the other causes put together. The profession should endeavor to prevent the vicious habit of women producing abortion with dirty darning needles, etc.

DR J. W. HOFF of Pomeroy, Ohio, desired to enter his protest against the statement of so many girls having had gonorrhea. He had practiced for forty-seven years, and had not seen half a dozen cases in daughters. Perhaps it was not so common as it had been represented in Philadelphia.

DR. JOSEPH HOFFMAN of Philadelphia, directed attention to affections of the bladder incidental to parturition and to the puerperal state, brought on by constipation and dislocation of the uterus, etc. Of all the troubles women were heir to, chronic cystitis was the one with which they are most frequently affected. He thought that many of the troubles with which women are afflicted, such as displacements, retroflexions, subinvolution, etc., could be avoided by insisting that the patient remain in bed for two weeks

after child-bearing. As to the occurrence of gonorrhea in children, he had rarely seen it. He had often found tuberculosis in the pelvis, and he believed it frequently followed pus collections, if it was not caused thereby.

Dr. E. H. N. Sell of New York city, had seen gonorrhea in children, and even in a minister's family from a supposed moral country district. He would not mention the State. In one case the disease extended so as to involve both bladder and kidney.

Dr. Lewis S. McMurtry of Louisville, Ky., said it had been demonstrated by modern pelvic surgeons beyond question, that the physician in his efforts to relieve functional disorders of the pelvic organs in women very often unnecessarily inflicts upon them a disease of far more gravity than the one to which his treatment is directed. To illustrate: There is not an operator present who has not seen intra-pelvic inflammation result from forcible dilatation of the cervix. He is also perfectly satisfied that serious tubo-ovarian diseases are the result of the routine use of caustics upon the cervix—a practice still in vogue by some practitioners.

Dr. Noble, in closing, said he felt satisfied he had met with tuberculosis in several of his cases, as mentioned by the preceding speakers, although no microscopical examinations had been made. With reference to the relation of imperfect development of the uterus to the accidents of labor, he does not wish to be understood as saying that all lacerations of the cervix are due to this condition. In many cases they are due to bad obstetrics. The cause of a good deal of mischief is a very large baby coming through a small pelvis.

A FEW POINTS OF INTEREST TO THE FAMILY PHYSICIAN.

Read in the Section of Obstetrics and Diseases of Women, at the Forty-fourth Annual Meeting of the American Medical Association.

BY JOSEPH EASTMAN, M.D., LL.D.
INDIANAPOLIS, IND.

It is more or less presumptuous for a specialist to attempt to teach the general practitioner for two reasons: First, a large per cent. of general practitioners are capable of furnishing more pointers to the specialist that he could use in his business than the specialist could furnish to the general practitioner. Secondly, so many epistles have come from gynecological apostles in the past few years intended for the edification and education of the general practitioner that the man who makes his living by doing family practice is beginning to seriously reflect upon what relation he bears to the specialist.

Had I not for fifteen years been actively engaged in general surgery and medicine, nothing could have induced me to place my foot in this field which is actually suffering from intense cultivation, but now that specialists in gynecic surgery are starting up in almost every county seat I think it might be well to "tap the wheels" and elicit, if possible, the ring of solid metal or perchance the dull sound which indicates a crack in the wheel of our rapidly moving train.

Those of us who have opened the abdominal cavity many hundred times and tested our asepsis in the great lymph sac have picked up many little points pertaining to aseptic and antiseptic precautions of much value to the general practitioner. He has, however, often been led to believe that there are two separate and distinct factions; the one contending for and the other against antiseptics. There are no differences. "All are but parts of one stupendous whole." Therefore he has the right to throw the blame on the cœliotomist for his having committed a sin of omission, not using enough soap and water; or a sin of commission, having depended too exclusively on his bichloride solution and failed to scrub (sterilize) his hands, and even poisoned his patient with the deadly drug. The greater our experience and the more marked our success, the keener we should feel the weight of responsibility resting on us for what we teach. Reckless expressions as to methods of operating, treatment of cases, or results obtained are most reprehensible, even criminal, for in this way lives are sacrificed.

The student of human nature and the earnest seeker after truth can see the motives of those who insist that any kind of water is as good in surgical cleanliness as that which has been sterilized, or teach in their published statements and attempt to prove by their success that private hospitals are useless; that the same success can be obtained in the filth hovels of the city; that nurses who have had a large experience in supplementing the efforts of the abdominal surgeon with their wisdom obtained by observation are no better than such nurses as one can pick up. What is the difference, if in the use of chemical agents which destroy microörganisms, we advance a step farther and say prevention is better than cure; or that the prevention of fermentation—"sterilization," "asepsis," "clean surgery" are better than allowing fermentation and putrefaction to swarm with microbes, and then seek to kill them with chemic agents?

There is no difference in the ultimate aim of those contending for antiseptic surgery, and those who claim to be content with clean surgery, for the reason that cleanliness can not be secured and maintained without the aid of chemic agents of some kind. No wonder some of our surgical friends get blinded in the technique of antiseptic surgery. While wandering in their blindness they forget the principles enunciated by the great masters like Lister and Keith. These men proved by scientific research that all fermentation is molecular life. What use would there be in the sterilization of every instrument used in the pelvic abscess if we forget that pus cavities, after being exposed to the air, become a hot-bed for the production of germ life through fermentation and putrefaction? Of what use would all the antiseptic dressing over an abscess be, as compared with perfect drainage—that precious safeguard against absorption? Our apostles of clean surgery are exceeding careful as to who clean their sponges; do not allow any decaying organic substance in their private hospitals, knowing that no sooner does one decaying substance die than it begins to live again in molecular germ life, the prolific offspring of fermentation and putrefaction. Clean surgery is what we want. How shall we obtain it? By water? No; it can not be thus secured. Suppose one of these gentlemen drops blood, pus or serum on his clothing, or gravy on the lapel of his coat. Will water remove it? No; try soap, ammonia, ether, benzine. Ah, it takes chemicals to secure cleanliness. The difference between those favoring and those opposed to antiseptics is largely imaginary, a play on words. We can get it but not without the aid of chemicals. By this, I do not mean such agents as are usually considered germicides. I doubt the propriety of killing germs lest we irritate the tissues. These

pretended differences between sepsis and antisepsis can but confuse the average general practitioner or the beginner in surgery. For example: My friend who had located in the far west and had been doing some surgery, returned to make his friends a visit; found his way up to my operating room and was noticing our preparations for work. As I had once been his teacher I began answering his questions by explaining to him that the hands were the most frequent source of conveying septic material into the peritoneal cavity, and that for the past ten years I had been studying how to clean my hands; that now I had a soap made by a chemist, with olive oil and caustic potash, practically the green soap of the pharmacopœia. I showed him my scrub brush for the hands which is boiled every time after being used and then kept in alcohol and ready for use again.

I explained how it takes repeated rinsings to get rid of the soap suds from the pores of the skin before we place the hands within the abdomen. He answered me, "I have no use for all your details. I simply put my hands in the solution of bichloride of mercury and then I know that I am safe." I attempted to reason with him, stating that if I used a germicide for the hands it would be aqua ammonia, which would not only bring tears to the eyes commensurate to the solemnity of the occasion, but would penetrate deeply into the pores of the skin chasing the microbe home, and by its extreme alkalinity, if not killing him outright, weakening him until he would be comparatively harmless. Whereas, his bichloride of mercury by its astringency, would close the pores of the skin, thereby shutting the door after the microbe which it had frightened into its den. This doctor believed that there were two factions and had chosen the chemic side of the question.

I read in a medical journal an article by one evidently willing to teach the average doctor. In this article he describes the bleaching method much used in the Johns Hopkins hospital and other places. He says: "Making the hands brown in a solution of permanganate of potash, then immersing them in a solution of oxalic acid until the color of the potash is removed; the hands will be of a pink color." Here it is that "a little knowledge is a dangerous thing." The pink color is evidence that the acid is retained deeply in the pores of the skin of the hands, even after repeated rinsings under a stream of running water. Such hands put into the peritoneal cavity would be dangerous. Aqua ammonia applied freely will prove the presence of acid by making as much lather as could be made with a good article of soap. This repeated a few times the pink color is gone and the hands are anemic. This alternate flushing and shrinkage of the capillaries, making the pink color, no doubt helps to sterilize the hands. It could be as well done by alternately immersing the hands in cold and hot water.

Another friend asks me to meet him in consultation, his patient having been confined a few weeks before. He fears peritonitis and yet thinks it not possible, as the temperature has not been above 101, though the pulse is 140, wirey and feeble. The abdomen is badly distended. The pulse, the tongue and the countenance all point to septic peritonitis and death. Following the doctor I made a careful examination of the case. I asked for some soap and water to wash my hands. They furnished a piece of soap which had probably been selected, not because of its known composition, but because of its recommendation in the newspapers, including a certificate from a Brooklyn minister. The water given me was hard, containing much lime, magnesia, etc. I whispered to my friend that I could not remove septic germs from my hands with such material. He immediately brought his satchel, and after handling nearly everything in it gave me some tablets of bichloride of mercury to put in the water, and thereby to increase the chemical composition of the water and render it more worthless in cleansing hands.

After handling everything in his satchel he washed his hands in a solution of bichloride. Now, had he carried a hand brush boiled every time it had been in doubtful use, a vial of aqua ammonia to soften the water and a piece of soap made of olive oil and caustic potash, imitating the time honored soft soap of his grandmother, his armamentarium for sterilizing hands would have been nearer to my notion. There is something in soap. I ask the man in the alley back of my stable what he is going to do with the putrefactive, maggotty carcass of a dead dog he has laid in his cart. His answer was that he hauled them to the soap factory. I repeat there is something in soap. I insist there was a good deal in that soap. The nearer we stick to the religion and soap of our grandmothers the nearer we will approach moral and physical cleanliness of body and mind.

This good doctor was deceived as to the disease by too implicit reliance in his thermometer. I have many times seen a patient with septic peritonitis lie down and die, while I have never known a pulse to deceive me. We had in the profession more good pulse feelers before we had so many thermometers.

I get into my friend's buggy to ride home. He buttons up two coats, strokes down his long full beard, with hands and sleeves teeming, as I believe, with germs of septic peritonitis, then puts on a heavy pair of warm driving gloves which had done him service two winters,—surely nothing but fire could ever sterilize them. Five days later my good friend rushed into my operating room as we were getting ready for an abdominal section waving these same driving gloves in his hands. I asked him to retire. He did so, but remarked that he had changed his clothes.

This doctor's antiseptic precautions were faulty because of too implicit reliance in germicides which led him to overlook the fact that any microbe, having a particle of self-respect, would not attempt to stay where soft water, clean scrub brushes, plenty of elbow grease and repeated changes of clothing were customary.

The doctor's change of clothes was not satisfactory to me, so long as the gloves were used into which he had placed his hands after examining the case of puerperal septicemia. It requires the utmost painstaking to have our chain of antiseptic precautions strong in its entirety. "No chain is stronger than its weakest link." In studying septic precautions and applying the principles in our practice we often strain at a gnat and swallow a camel. This being true of those who are specially engaged in intraperitoneal work so that the least deviation from the strictest asepsis will be detected in the results obtained, how much more likely is he who is engaged

in general work to overlook some important detail in the change of clothing, and especially in what he is handling with his hands, including the gloves.

It was taught in former years that the obstetrician should stop practice after attending a case of epidemic child-bed fever.

These cases we now believe to have been puerperal septicemia, and despite my unbounded confidence in soft water, soft soap, scrub brush, ammonia, turpentine and alcohol, I am of opinion that no man is warranted in opening the abdominal cavity or attending an obstetric case within five days after his hands have been in contact with a case of septic peritonitis, if that peritonitis is at all in any possibility during its acute stage; and not even after the expiration of five days unless in this space of time there shall have been repeated changes of clothing, daily scrubbing of the hands and arms with soft soap, soft water, with ammonia poured into the brush and the hands immersed in turpentine afterwards. In this purification the hair and beard should receive due attention.

This statement may be challenged by those who make abdominal sections in cases of pus tubes, but I must draw the line between cases of sub-acute and acute septic peritonitis whether the same be puerperal or not. In a recent conversation with Dudley of Chicago, I find that this conscientious man has been thinking in the same line and arrived at the same conclusions as myself in this regard. Have we not erred in publishing to the general practitioner what numerous lives we could save by abdominal surgery? Would it not be better to give him the benefit of our experience and some of the details of our aseptic precautions, and thereby enable him to avert the probability of carrying the death warrant of his patients in the hair follicles on his hands, under the finger nails and in the gloves? Is it not time that we quit contending that there are two factions in antiseptic surgery, one depending on water, the other on chemicals? Inasmuch as chemicals are useless without water and water without chemicals, even a soap of known chemical composition, the systematic combination of the two in the proper way of their use upon the hands is what the average physician needs to know. The man who is daily dealing with the peritoneal cavity has a store of knowledge of great utility to the general practitioner. And yet we must forget self and publish only that which we have proven to be right and safe, like Dr. Kelley who discarded the *American Journal of Obstetrics* when he found that his bleaching solution of potash would not kill bacteria in a skein of silk.

I meet my friend in consultation. He had told me to bring all kinds of probes to get entrance into the cervical canal as he had failed to find an entrance into the uterus, notwithstanding he had used the speculum many times. I found the uterus crowded up behind the pubes by an ovarian cyst as large as a water bucket which the doctor had not detected; secured the consent of the patient and set the day to remove the cyst. As we were about to leave, the doctor asked if I had not better use the speculum to see if we could not pass a sound. I replied that fingers were made before forks, speculums or sounds and that conjoined manipulation gave so much information that sounds were going out of use. A very large majority of practitioners I meet are capable diagnosticians. A few are sadly deficient in physical diagnosis of abdominal disease. It is often a lack of persistence in abdominal palpation and determination to master the subject. They have not the art of moving the fingers over the viscera carrying the skin with fingers. And sometimes they do not even obtain a knowledge as to whether the tumor grew from above downwards or from below upwards. If from above downwards, can it be manipulated back, as in floating kidney, or moved from side to side, not upward, as in distended gall bladder. They do not understand that palpation of an ovarian cyst should give signs of fluctuation, and a fibroid of a solid; that in both there would be dullness on percussion. Whereas, in ascites there would be resonance. I mention these points because there is some danger of inspection, palpation, auscultation and percussion becoming a lost art. There are so many anxious to make exploratory abdominal section.

One of the ablest practitioners of my State calls me in consultation. His telegram suggests that I come prepared to make an abdominal section. The case is a boy and he has been suffering three days from inflammation with excruciating pain in the region of the vermiform appendix. The doctor has made postmortem examination, finding a gangrenous vermiform appendix, and from his knowledge gained by this postmortem and by his reading the current literature of the day, especially the teaching of Morris of New York, that all cases of appendicitis should be operated upon, believed that success would follow and life be saved if we only operated early enough. I, having seen a few operations followed by death because the inflammation was yet in an acute stage, that is to say while the circumscribed septic peritonitis, which sometimes accompanies cæcitis and appendicitis was acute not sub-acute, believed that an operation would surely be followed by death, and that if by opiates we could arrest the progress of inflammation and seize the opportunity in the interval of the attack, operative interference might do some good. Knowing also that some of these cases make fairly good recoveries without operation I declined to operate. Neither the doctor nor myself were satisfied with the results in this case, and this subject is of such vital interest to the general practitioner that I quote from a recent article by Dr. Schaefer as being in point: "It has been asserted by McBurney of New York, that 90 per cent. of all cases called perityphlitis are really cases of appendicitis, and this statement seems to have been almost universally accepted by the profession of our country, for the term perityphlitis has been almost entirely dropped from the textbooks and the writings of most surgeons, and appendicitis adopted as a substitute. This change of terms has been accepted with too great haste in our judgment and is in all probability one of the chief causes which lead to the great differences of opinion relative to the question of operating; for we shall find upon searching the literature of this subject that various conditions may be and in all probability are described under the term 'appendicitis.' I am led to believe through my experience that a larger percentage of cases of so-called appendicitis than we are aware of are inaccurately diagnosed. This, of course, will be difficult to prove, but when we look at the facts produced by practical experience, enough presumptive evidence can be brought forward to indicate that the assertion

is not without foundation. How do we arrive at the facts concerning the statistics of appendicitis? 1, by noting operation. 2, by recording results of autopsies. But is it not reasonable to suppose that the greatest source for statistics for lesser diseases of the caput coli is lost in the fact that they recover (it is claimed by Treves that 90 per cent. of all cases get well spontaneously) so that no autopsies are made? I feel convinced that a simple catarrhal cæcitis with an accumulation of fecal matter, is mistaken for appendicitis much more frequently than is generally conjectured, having had at least five cases of this kind recently myself which recovered. In each, after the acute symptoms were subdued, repeated colonic flushing brought away large quantities of dry, lumpy, fecal matter and the tumor vanished. In considering this subject we are at once confronted by two problems: 1, diagnosis. 2, the question of operation. In perusing the literature of perityphlitis and appendicitis which during the past few years has become extraordinarily voluminous, one is struck with the fact that most writers and operators take a radical stand for or against operative procedure, and those who favor operating are again divided upon the issue of 'early or late' operations. It seems strange to the casual reader that minds experienced in the same line of work should differ to so great an extent in considering questions of so practical a nature. There is an old axiom, 'whenever pus is discovered let it out if possible.' That the indications for the evacuation of pus in this instance are of greater import than in any other conditions or locations no one will dispute. What, then, causes the hesitation? 1, the difficulty lies in finding the pus. 2, the great danger to the peritoneum and its sequelæ. The first difficulty the surgeon will always be confronted with in a proportion of the cases. The second difficulty will be more and ignored as we become more familiar with the work, and more perfect in antiseptic surgery."

Here is common ground where a wise general practitioner with large experience and much reading meets the specialist, both determined to do the very best thing for the patient, and yet they can not see alike.

Between the general practitioner and the specialist; the one looks at the thing in a general way and the other in a special way. They are both instructed by association together over a given case. The ideas of the specialist are widened. The ideas of the general practitioner are narrowed to a closer study as to the particular stage of the disease suitable for operative interference; and ultimately we shall, as I believe, unite in a mutual faith that when to operate is a vital question requiring much skill and surgical wisdom to answer, and even then we will sometimes find that our best judgment and conscientious actions have failed to save a life. I believe that the specialist should concede much to the experience and judgment of the general practitioner. What success I have had is in a measure due to association with successful, intelligent, general practitioners. I believe the specialist should be as a hand maid to the family physician, by no means supplanting her mistress nor yet usurping her rights but always assisting her to maintain them.

Blank applications for membership in the ASSOCIATION, at the JOURNAL office.

THE RIGID OS AS A COMPLICATION IN LABOR.

Read before the Section of Obstetrics and Diseases of Women, at the Forty-fourth Annual Meeting of the American Medical Association.

BY E. H. KING, M.D.
MUSCATINE, IOWA.

One of the most frequent complications which occurs to annoy the obstetrician, protract labor and exhaust the patience and endurance of the parturient, is a rigid and unyielding os.

This term is applied in a general way to a variety of conditions, materially differing from each other; but possessing this feature in common—the cervical tissues are unyielding, and the os undilatable.

This may depend upon non-development in the early primipara; upon fibrous degeneration in the old; upon cicatricial induration, consequent to previous lacerations, and upon pathological change, incident to carcinomatous disease.

But we frequently find a persistent rigidity where none of these conditions are present; wherein the lower uterine segment is apparently fully developed, and normal in character, thin and soft when quiescent, but upon the advent of each uterine contraction the encircling tissues spasmodically contract and become rigid and unyielding. More or less sensitiveness and irritability of the cervical tissues are present, and occasionally we find an acute hyperæsthetic sensitiveness of the whole vagina, sometimes accompanied by local heat and dryness. The patient is restless, nervous, irritable and depressed, is annoyed by examinations, suffers severely at each recurrence of uterine effort, and persistently demands relief from the attendant.

Again, we may find the encircling tissues to be a thick muscular band, insensitive and rigid.

The patient may be in good health; presentation, position, the relative size of the child to the maternal pelvis, uterine contractions and personal effort may be all that could be desired, yet, whenever these rigid conditions persist labor will be correspondingly protracted, the patient subjected to increased and unnecessary pain and distress and liable to suffer from injurious sequelæ.

The most serious, but fortunately the least frequent result to be apprehended is rupture of the body of the uterus, allowing its contents to escape into the abdominal cavity. More frequently has there been a complete separation of the cervical rim, and quite frequently, or rather perhaps, the usual result is more or less laceration of the cervix, giving rise to hemorrhage and laying the foundation for future pathological and gynecological conditions, which afford a fertile field for the specialist to cultivate, often to his own financial rather than to his patient's physical improvement. Unaided, after long continued and vigorous efforts, the minor tissues around the os may tire out and give way to slow dilatation; but more frequently the sudden rupture or laceration, previously noted, may occur, and labor be advanced towards completion. Then, too, long continued pressure against the cervical rim, especially in the absence of the protecting bag of waters, is liable to cause contusion with subsequent necrosis, which will add another factor towards future pathological complications, and trouble and ill health for the patient.

In cases wherein structural change has occurred from carcinomatous deposit, surgical interference is beyond doubt the proper method of relief; making lateral or bi-lateral incisions through the diseased tissues and keeping the patient sufficiently anæsthetized to prevent undue suffering until delivery is accomplished. Incision is also proper in cases of non-development, and in fibroid degeneration after failure to obtain dilatation by milder means.

In cases of irritable, spasmodic or of muscular rigidity, various methods and remedies have been employed. Blood letting to faintness is an old remedy and often effective; but bleeding is not fashionable at the present day, and the average practitioner does not possess the necessary moral courage to revive the practice. The relaxing effect of the hot bath, recumbent or sitz, has been used with benefit, but is often inconvenient or impossible to give in general practice. Ipecac, tartar emetic, lobelia, tobacco and other emetics have been given ad nauseum with more or less effect, but more often to the doctor's disappointment, and the patient's disgust.

Digital and instrumental dilatation has its advocates, but is objected to by those who live in mortal dread of any such interference, on the score of the danger from septic infection. Chloral hydrate is often used but is perhaps of more value to relieve the excessive irritability and procure rest than to effect immediate dilatation, and the same may be said of opiates in their various forms.

Undoubtedly the most popular remedy of recent times is anæsthesia pushed to a degree of complete relaxation. It is often efficient, and as it relieves the patient from the agony, it is hailed with delight by the sufferer and ever after held as a boon of inestimable value. But anæsthesia will sometimes fail and organic disease or personal prejudice may preclude its use.

I have the pleasure to offer another remedy, not to my knowledge generally used by the profession for this purpose, viz., atropia used hypodermatically. So far as I am aware, it was first used for this purpose by the late Dr. A. Ady of West Liberty, Iowa. Although belladonna, extract and ointment has been applied to the cervix for this purpose from time immemorial, Dr. Ady has used atropia for many years in his practice, and he states "that it will as certainly dilate the os, as it will the iris," and in the cases wherein I have used it, I can fully concur in the statement. I believe it to be the most prompt and efficient remedy we possess to inhibit the contractility of the circular fibers of the cervix, thereby favoring prompt dilatation and thus accelerating labor. 1-100 gr. will generally be sufficient. Its effects will be manifest in from fifteen to twenty minutes. Rarely will a second dose be necessary.

The only unpleasant symptom attending its use is the dryness of the mouth and fauces and dilatation of the pupils. Neither in Dr. Ady's experience or in my own has it seemed to favor hemorrhage or interfered with postpartum contractility of the uterus or with lactation.

Possibly, delirious excitement may be caused by it in persons peculiarly susceptible to such an effect of the drug, but such cases must be extremely rare.

I therefore briefly present this remedy to the profession that it may be given a thorough and satisfactory trial, and its true value be determined.

EPITHELIOMA OF THE TONGUE, AND ITS TREATMENT.

[Abstract of a paper read in the Surgical Section of Pan-American Medical Congress.]

BY L. C. LANE, A.M., M.D. (Berol) M.R.C.S. Eng.
PROF. IN THE COOPER MEDICAL COLLEGE, SAN FRANCISCO, CAL.

The author of this paper accepts the view of those observers who assert that epithelioma is the only form of malignant neoplasm which attacks the tongue, except such as may have reached that organ after primary invasion of contiguous structures.

Epithelioma has its origin deep in the epithelial elements and, according to its site, may be divided into two classes—the excrescent, and the internal or interstitial. Each form may arise from a papilla, wart, naevus or limited abrasion. In the excrescent variety the growth is outward, tuberculated or wart-like prominences being isolated or forced into an uplifted plateau. The penetrating species commences usually on the side of the tongue, the newly formed elements crowding upon and destroying as they invade, the deeper structures, finally reaching and opening blood vessels of more or less magnitude. These metastatic processes are continued until the affection has no definite bounds.

The causation of epithelial cancer of the tongue is unknown, but certain agencies might be cited as promoting its evolution, such as calcareous incrustations on the inner side of the teeth, sharp points or edges of the teeth which continue to wound the borders of the tongue, and the habit of thrusting the tongue into an interstice between the teeth. The use of tobacco is probably a causal agency, the disease being far more frequent in men than in women. Epithelioma of the tongue seldom appears before the fortieth year of age. When allowed to run its course lingual cancer completes its fatal work within fourteen months. Operative interference does not offer encouraging prospects because so frequently undertaken late in the progress of the growth. Probably as high as 75 per cent. of the cases might be saved if the disease were seen in the primary stage and treated upon surgical bases, but meddlesome ignorance too often monopolizes the precious time during which the patient might be saved. The absence of metastatic glandular infection may be regarded as the only test of safety. When intelligent management has stepped in and prolonged life, two years is usually the limit of time, before death ensues.

The author's paper considers at length the gross pathology, diagnosis and surgical treatment of lingual epitheliomatous growths and contains ample bibliographical research with citation of cases.

MUSCLE BUILDING AS ILLUSTRATED BY THE MODERN SAMSON, SANDOW.

BY G. FRANK LYDSTON, M.D.
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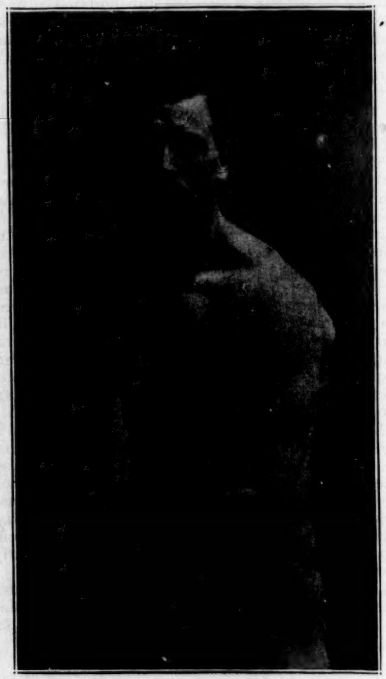
It has frequently been remarked that men of the present day are not so strong as those of times past, and there are many reasons for this assertion. An inspection of ancient armor is sufficient to convince one of the truth of this statement. In looking at specimens of ancient armor, we are at once impressed with their great weight and comparatively small size.

It would distress John L. Sullivan, I have no doubt, to force himself into one of the largest suits of armor that have thus far been exhibited. Once he had succeeded in arraying himself in the suit, he would doubtless feel more like reposing peacefully upon the ground than vaulting into a saddle and running a tilt in a tourney. One thing is certain, viz: that the soldier of ancient times although by no means a Sullivan in physique, could put the average modern athlete to the blush in point of strength and physical endurance. It is obvious that the men of former days must have made up in the quality of their muscular fiber what they lacked in bulk.

Of all the living modern examples of muscular possibilities Sandow is probably the finest specimen.



This man shows in a very marked degree the wonderful results which can be obtained by a systematic and philosophical method of muscle building. Sandow is by no means a large man, being but 5 feet 8½ inches in height. To see him arrayed in evening dress, the uninitiated would hardly believe the tales of physical prowess which can be told of Sandow. Sandow was born in Prussia, and is now 26 years of age. He weighs—stripped to the buff—186 pounds. The measurements which he claims are: Chest, 46 inches; waist, 29 inches; biceps, 19¼ inches; thigh, 27 inches; forearm, 19 inches; calf, 17½ inches; under axilla and over deltoid, 17 inches; under axilla and over the shoulder, 21 inches. The maximum chest expansion is said to be 14 inches.

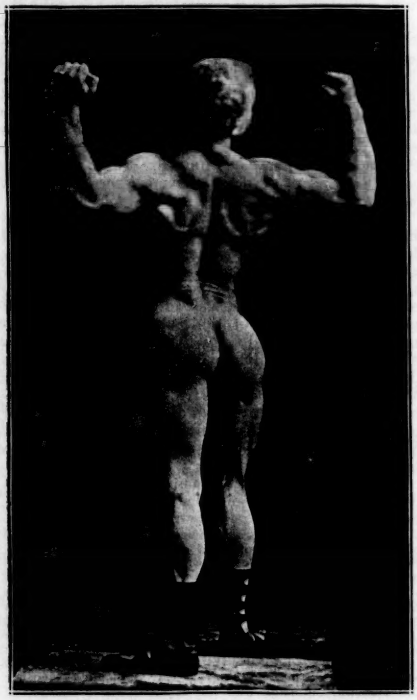
I have not had the opportunity of verifying these measurements and am inclined to believe that they are somewhat exaggerated. Especially am I inclined to doubt the chest expansion, which although simply wonderful would, I think, show somewhat differently from the published estimates.

To the student of anatomy Sandow is an object lesson worthy of study; a more beautiful demonstration of the superficial and more important muscles than this man presents could hardly be imagined. This demonstration is made possible by the perfect control which Sandow possesses over even those muscles which, however excellent the natural development of the individual, are never under very perfect volitional control in the average subject. In an experience and observation of physical training and its results, extending over a period of twenty years, the writer has never seen an athlete who has attained a degree of perfection in this respect which could be compared with that attained by Sandow. A glance at the pictures which have been reproduced from the photographs which Mr. Sandow kindly presented me, will well illustrate some of the points in his development which are most noteworthy. It has often been said by scientific iconoclasts, that ancient painting and sculpture is very unreliable in anatomical details. Especial stress has been laid upon the "checkerboard" appearance of the abdomen seen in various heroic works of art by the old masters, as an illustration of this defect. If the reader will glance at the front view of Sandow, he will observe a division of the abdomen into rectangular areas of muscular eminences which are more prominent than those of any painting or statue with which I am familiar. This extraordinary development of the recti is, however, by no means disproportionate to the development of the other muscles of this remarkable man. On inspecting the back, as seen in the cut, a clear, distinct outline of the various muscles is observed. Attention is especially directed to the scapular muscles and the trapezii. The muscles of the limbs are equally well developed. The pectorals and that usually poorly developed muscle, the *serratus magnus*, are of phenomenal development.

When at rest, Sandow's muscles and skin are soft and pliable, but when the muscles are contracted from voluntary effort, it is wellnigh impossible to pinch up the superlying tissues.

It is a striking fact that Sandow belongs to a family no other member of which was ever noted for great strength; or, even a taste for athletics. Sandow himself, until he was 18 years of age, was of rather frail build. At that age he began a systematic course of training by a method peculiarly his own. His system consisted essentially in the acquirement of perfect voluntary control over the various groups of muscles, and where possible of single muscles. By thus specializing he was enabled to localize his muscle building where it appeared to him to be most needed. Having acquired a fair degree of development and control of the group selected, he then devoted his attention to another, and so on until he had succeeded in acquiring the foundation of the remarkable general development which he now presents. According to Sandow, the only apparatus used in his preliminary training was a pair of five pound dumb bells. It was not until he had attained

an approximately perfect general development that he began those wonderful feats of strength which are now his daily avocation. To those who have not seen him at work, Sandow's exploits sound like a fairy tale. He plays with fifty-six pound dumb bells as though they were marbles, and with eyes blindfolded, his feet tied together and one of these heavy bells in each hand, turns a back somersault as gracefully as could any empty-handed gymnast. After this preliminary warming up, a huge dumb bell, each end of which is formed by a hollow globe containing a man, is brought in, and our modern Hercules gracefully lifts it from the floor and pushes it straight up with one hand at full arm's length above his head



with apparent ease, letting his burden down again without shaking up his living dumb bell to any great extent. The weight of this bell and its contents is 305 pounds.

A still more wonderful feat is his exhibition on the Roman column. Strapping his feet to an iron upright at some distance above the floor, he supports his weight by a couple of straps attached to his knees. Leaning down backward from his horizontally extended position he then picks up two men, one after the other, and places them upon his knees. The strain upon the back, thighs and arms in this feat can be readily imagined. As a climax for his exhibition Sandow next supports a platform upon his chest and knees while resting upon his feet and hands, and upon this platform three trained horses are balanced. The combined weight of the platform and horses is about 2,800 pounds.

Much curiosity has been exhibited regarding Sandow's system of training, especially as regards his diet and mode of life. It is noteworthy that he eats, drinks and smokes about as he pleases, the old fashioned idea of dietetic restriction for athletes evidently having very little weight with him. It is astonishing that he is not compelled to be more abstemious, but he is apparently quite as capable of immense muscular effort after a course dinner and a liberal supply of wine, followed by one or more cigars, as at any other time. After his performance is ended Sandow takes a cold sponge bath and a rub, as does every well informed athlete.

According to Sandow, ten minutes exercise with five pound bells night and morning is all that is necessary to attain a superb muscular development. In proof of this, he exhibits a pupil in whom three months training has produced marvelous results.

Irrespective of my own opinion regarding the disastrous effects of such severe strains as those imposed by Sandow upon himself, I am compelled to confess that I have rarely examined so perfect a type of good health as this man presents.

A heart perfectly normal in size and action, and lungs free from emphysema, are hardly to be expected in one whose daily work comprises such a series of severe muscular strains as those to which Sandow subjects himself, yet these organs are apparently sound. The heart is not disproportionately developed and its action is perfectly normal. Even under severe strain the respiration and heart's action are but little disturbed. I found that the respiratory movements numbered 20 per minute and the pulse 80 before our subject went upon the stage. On examination about half an hour after the regular performance—during which time Sandow occupied himself in displaying his muscular development to a select audience in his dressing room,—the pulse was 90 and the respiration 20. It is worthy of remark that he had partaken of a hearty meal with a liberal supply of champagne shortly before the performance and had been smoking freely during the evening. The average athlete would hardly dare to go through such preliminaries even when ordinary feats were to be attempted. By far the most interesting feature in Sandow's work is his method of muscle building. He begins as already remarked, by cultivating volitional control over the several muscular groups. This is especially interesting to me as it is precisely the same system that I have advocated in several articles upon physical training, and is essentially the same as that which I put in practice in gymnastic classes some years ago. The principle involved in proper muscular training is exemplified by those individuals who by practice are enabled to acquire great volitional control over such muscles as the auricular and occipito frontalis. As is well known, the platysma myoides is poorly developed in the human subject, being but a remnant of the panniculus carnosus. It will be found that it is possible to acquire a marked degree of development and control of this thin and unimportant sheet of muscular fibers. If this can be accomplished in such muscles as those mentioned, it is certainly reasonable to suppose that more per-

fect results can be accomplished in the case of the more important muscular groups. By systematic practice in this direction one is enabled to get sufficient exercise without any apparatus whatever. It is the relative degree of control which the individual acquires over his various muscles, rather than their bulk, that determines their strength. Such enormous development as that of Sandow, is by no means necessary nor even advisable. Feats of strength do not constitute the aim of ideal athletics, i.e., athletics for health. Given a bulky muscle, and we usually have a slow muscle. The ideal muscle is not always the one which stands out in such bold relief as do those of Sandow. The average big muscled man is muscle bound, and perhaps shoulder bound, and while Sandow is apparently an exception to the rule,he himself in all probability displays to less advantage in feats requiring a combination of skill,strength and agility. The question is often asked of Sandow, "what could you accomplish in pugilism?" Sandow replies and quite justifiably that he would not dare strike a man; that he can break a four inch plank with a blow of his fist, etc., but the ability to kill a man with a blow of the fist is not pugilism, and striking a plank is vastly different from striking an active skilful boxer, who is not in duty bound to stand still and be struck. Very few boxers are ever able to exercise their utmost strength in striking a blow. To put a blow accurately and quickly in upon an object in motion, is vastly different from striking a sandbag. Especially is this true when the danger to one's self is proportionate to the violence of the attempt made in striking an opponent in case a counter blow is received. Experience has shown that bulky muscled men are, on the average, failures as pugilists and wrestlers. Corbett is an ideal athlete, yet his muscles are smooth, well laid and not bulky. It is to be hoped that Sandow's exhibitions may not have a pernicious effect upon aspiring youths who imagine that ideal training implies great feats of strength, and muscles which stand out in bold relief like an anatomical demonstration.

A point worthy of consideration is the fact that Sandow is of a very phlegmatic temperament. Persons of a more sensitive organization, and brain workers, would soon pass the danger line if they attempted to emulate Sandow. The personal equation must be remembered in athletics as well as elsewhere. A word of caution is also necessary in respect to diet and drink. While a restricted regimen is a relic of the past in athletics, more care is necessary than Sandow imposes upon himself—the personal equation again. Wine, tobacco and athletics mix but poorly.

The question now arises: what damage if any, does such work as Sandow's produce upon the individual? From what has been said of Sandow's present condition one might be led to infer that such feats of strength are harmless, but such is not the fact. Sandow is confronted by two dangers. 1st. Death at an early period after complete suspension of his athletic strain. 2nd. Death at middle age or soon thereafter, from a continuance of his work.

In the first instance we will suppose that our subject ceases his work—voluntarily or otherwise. In this event he is confronted by a serious problem. He has solved the problem of developing his heart and lungs *pari passu* with the development of his general muscular system, but how is he going to bring about involution of his lungs and heart *pari passu* with the general muscular involution which must follow rest? To do this is impossible and the result is a relative disease of his enormous heart and lungs. Disuse means decay; degeneracy of cardiac fiber and lung tissue results; degeneracy offers a constant invitation to disease of various kinds. The most powerful pugilist America ever produced, quit the "squared circle" and entered a counting room, only to die of consumption within a year. The athlete had need of large lungs, but large lungs without their accustomed exercise were a misfit in a sedentary occupation.

We must not forget in considering the immediate effects of muscular strain, the possibility of chronic myocarditis. Many a powerful man has paid the penalty of over exertion by the development of so-called heart failure during some acute disease. I recall the case of a professional friend who used to boast that he could eat more, drink more and lift heavier dumb bells than most men, yet this man died of a comparatively slight ailment. Heart failure in this case meant simply a myocarditis from gout and over strain. Some of my readers may recall the "white spot" in the soldier's heart which was recognized as a result of over exertion years before we knew aught of myocarditis.

The probable disastrous effects of a continuance of his work involves degeneracy of the blood vessels. It has been said that "a man is just as old as his arteries." Many a strong man has verified the truth of this to his cost. At 45, Sandow will be in the prime of his strength; his arteries and heart, however, will not be in the prime of their elasticity. Readjustment after strain will be no longer possible. Degeneracy of arterial walls and cardiac fiber will occur; dilatation of the heart and trouble with the coronary and minute cerebral arteries is likely to develop. Apoplexy and aneurism are possibilities. The lungs will lose their elasticity and emphysema will supervene. Verily the athlete's lot will then be by no means a happy one.

Sandow is a wonderful man, but his example is pernicious. His system of muscle building is superb; its application may be dangerous.

In looking at Sandow's enormous muscles I was reminded of a remark made by my old teacher many years ago. Pointing to a cast of an enormously muscular arm upon the wall he said: "Boys, remember that such a biceps is possible, but only at the expense of life; the man from whom that cast was taken died in its acquirement." Truly, a man is not a horse and may not do the work of a horse and live. Athletics for health, should be the motto of the man who trains. Athletics for big muscles and competitive feats of strength and endurance are pernicious, illogical and dangerous. Let the man of spare muscle remember the personal equation and not try to make a Samson of himself. One may not gather figs of thistles. The average man had better content himself with perfect control and excellent nutrition of muscles of even mediocre development than to emulate Sandow. From personal experience I am also inclined to advise against getting into so-called perfect training. Especially would I advise against attempts to become expert general athletes on the part of men who lead sedentary lives or who are brain workers.

The best exercises are those involving more or less skill and active attention; the more like play the better.

A man may use dumb bells and think of the price of wheat; if, however, he is engaged in boxing, wrestling, fencing, base ball, hand ball or tennis, he is apt to pay strict attention to the subject in hand.

Cheerful companionship is essential. When patients ask me what they had best do in the gymnasium, I usually advise them to play boy for an hour and follow the play hour by a bath and a good rub down.

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SATURDAY, SEPTEMBER 16, 1893.

THE FUTURE GREAT UNIVERSITY.

The meeting of the Pan-American Medical Congress was attended by few, if any, of the unfortunate misunderstandings that so frequently leave unpleasant memories.

No congress, medical or secular, has ever had deeper motives of patriotism for its mainspring. The medical profession of the Western hemisphere were anxious to take the initiative steps in the formation of this new medical union, which means the emancipation of the profession of medicine of this part of the globe from European control.

This great change can not be immediate, but it is sure. The future medical students of Pan-America will attend the universities of the United States, Mexico and South America. Berlin and Paris schools will attract them no more than the older institutions of Padua and Leyden.

The progress of civilization is ever westward. Athens and Alexandria were succeeded by Salernum and Cordova; they in turn by Paris and Edinburgh.

Boston and Baltimore now claim a share in the leadership, closely followed by Philadelphia, New York, Chicago and others.

The medical schools of the cities of the United States have done very much in this Columbian year to place them in the front rank, but the history of the evolution of human intelligence shows that these efforts are only bringing into view the eternal principle mentioned by BISHOP BERKELEY:

"Westward the course of Empire takes its way."

It is in no spirit of self-glorification that we write this article; but no man can conscientiously compare the technique of the methods of the MASSACHUSETTS GENERAL HOSPITAL, the PENNSYLVANIA HOSPITAL or the JOHNS HOPKINS HOSPITAL, without knowing them to be superior to those of the HOTEL DIEU, the MOABIT or the ALLEGEMEINE KRANKENHAUS. As for the London hospitals, there are none to be mentioned in the same class, except possibly ST. THOMAS, and that is so cramped in its operation and hampered by traditional customs as to resemble more the institutions of the dawn of the century than those of its close.

In the new world, then, we may expect the great university of the next quadri-centennial; and the present status of American medical education as shown in the late Pan-American Medical Congress in its Section on Pedagogy, is such as to warrant the hope that not only will the United States in its turn, for its due season, be the seat of the world's great medical school, but that the time is near at hand.

One may not sufficiently lift the veil obscuring the future to show what American city may have this great honor, but it certainly will not be established in any city where the profession are self-sufficient, where they are already finished to an extent that prevents them from taking part in the professional exercises of Pan-American conventions, or the entertainment of their invited guests. When the profession of a city become so wrapped up in their own affairs as to become oblivious to what is going on about them, the outside world will certainly allow them that peace and quiet which betoken decay and dissolution.

THE ARMY MEDICAL EXHIBIT AT THE WORLD'S FAIR.

The exhibits of the Medical Department of the United States Army are in charge of Captain LOUIS A. LA GARDE, Assistant Surgeon, U. S. Army. They are contained in a regulation post hospital, of eighteen beds, and in a field hospital adjoining.

The Regulation Hospital.—This structure is built of frame and staff. It is divided into a ward and the administration part. The latter has two stories, having four rooms upstairs and five downstairs. In the original plan, the latter furnish rooms for kitchen, dining-room, store-room, dispensary and post surgeon's office. The ward is a large room, 56x24, leading from the main hall of the administration building.

As the exhibition of one or two beds would illustrate the pattern of bed and bedding used in army hospitals, it was not considered advisable to have more than a sample or two of beds in the ward, and the rest of the valuable space in this part of the building is devoted to the display of specimens from the Army Medical Museum and some of the supplies furnished the medical department at every army post. 1, we find the surgical instruments among which we have noticed some aseptic cases from the finest makers; 2, the pouches and first aid dressings carried by the Hospital Corps men in times of war; 3, the chemical and bacteriological sets for the analysis of air and water and soil; an elaborate out-

lay for the use of those officers practiced in matters of theoretical and practical hygiene. 4, a collection of wet and dry preparations illustrating different pathological lesions; 5, models to show the evolution in hospital construction, and transportation of the wounded in war; 6, 300 bromid enlargements and transparencies, illustrating pathological and histological lesions of various kinds; 7, a series of eighty consecutive sections of bone illustrating the form and structure of the osseous tissues: 8, ten series of consecutive sections of human embryos illustrating the anatomy of the various portions of the body; 9, a collection of microscopes showing the evolution of the instrument; 10, a collection of deformed bullets, and lesions of bone, recent and remote, from gunshot injuries, gathered from cases during the war of the rebellion.

These specimens form a great contrast with a collection of sixty specimens of bone in the opposite corner of the room which illustrate the effects on bone of the German silver mantled projectile of 30 caliber. Each specimen here is mounted, with the bullet which inflicted the injury beside it, and the slight deformation of the projectiles and their tendency to perforate the spongy ends of bone—circumstances which add so much to the so-called humane phase of the rifles of small caliber now forming the armament of all foreign nations,—are among the more striking pictures of this important collection. The specimens show the difference in destructive effects between the old leaden bullet of 45 caliber, which our army has used since 1874, and the 30 caliber projectile which we are about to adopt with the Krag-Jorgensen gun. The specimens were prepared by DR. LA GARDE, U. S. Army, at Frankfort arsenal last winter for the exposition. The cadavers were consumed in testing the effects of the projectiles at all the distances between the 100 and 2,000 yard ranges. Those who would wish to see the ravages of the past and future wars on bone should not fail to examine this collection.

The rooms downstairs contain supplies and the records kept by the medical department. Two of the rooms upstairs are thrown into one large room, by sliding doors, which is used as a clinical laboratory for the inspection of practitioners of medicine only. The object of this laboratory is to show a clinical laboratory to a general hospital in time of war. In appointment it was largely patterned after the clinical laboratory of the Johns Hopkins hospital. There are eleven microscopes displayed, by the aid of which pathological, histological and bacteriological specimens are shown. There are a number of thermostats in operation, and the collection of cultures on various media is all that could be desired for the study of bacteriology from the general practitioner's standpoint. DR. E. H. WILSON of the Maryland laboratory is the bacteriologist, and there are two medical officers and subordinates constantly at work.

The Field Hospital.—This part of the display is under canvas. It is probably the most elaborate attempt ever made by an army medical department to show the resources of surgery and first aid on the field of battle. It consists: 1, of a wall tent for the medical officer which contains a field desk, folding cot, tables and chairs; 2, a hospital tent in which sick call is held, and where the records and dispensary supplies are kept; 3, two hospital tents pitched end to end to be used as a ward. These contain twelve cots neatly made up with the field linen, bedsacks of straw, blankets, etc. The field furniture for the ward is limited to folding chairs and tables; 4, a hospital tent, called the squad tent for the detachment of the hospital corps on duty, eight in all. These men are drilled twice per week in the methods of rendering first aid and transferring wounded and sick soldiers from litters to ambulances, etc.; 5, shows a wall tent to be used for cooking, the Buzzicot oven and other cooking utensils; 6, a hospital tent to be used as a dining-room in which is shown the folding chairs and folding field dining tables, a food and mess chest; and 7, a common wall tent containing a bed pan and earth closet. The present field furniture of the medical department has been only recently adopted and it shows the display of much ingenuity and forethought for the care of the sick.

BIOLOGICAL PROBLEMS OF DEATH.

In some of the recent German reviews this topic has been discussed at some length. Death is called a definite arrest and change of life. This can only occur among multicellular beings, and is not found among unicellular organisms. These latter increase by fusion, growing to a certain stage, then dividing into two parts alike in size and structure. These organisms may be called immortal, because if protected from violent death live on indefinitely. The individuals of these unicellular species on the earth to-day are far older than mankind, and as old as life itself.

In the multicellular organisms, reproduction comes from certain germ cells in which the whole body participate. In the higher organisms of this class two forms of cells exists. One the somatic, the other the reproductive; the former suffer death and change, the latter continue. Death is simply adaptation to new conditions. Death does not necessarily follow reproduction, although the purposes of the organism are fulfilled in part by this act.

Life goes on continuously; the forms change by death and adaptation to circumstances, but one unbroken line of march exists from the first.

Reproduction is the point of change, when the

forces of the old organism pass into a new state for the continuance of life under more favorable conditions. In a large class of organisms death follows this act. Death in old age is simply the limitation and end of the power of cell production. Life in the body is a continuous death and reproduction of cells. After a time the equilibrium is broken up, a certain class of cells become exhausted and die, and are not replaced or eliminated, and interfere with the functions and economy of the body. The division of labor in the cell organism is broken up, and some particular cell function is arrested. The dead and worn out cells are not replaced, and become an obstacle for the destruction and obstruction of other cells. The work which these cells fail to do must be done by others, whose normal activity will be taxed to its utmost, followed by early exhaustion and death. Both the cells and the reproductive cell function reach the limit of their existence; this is death. This cell life and renewal is finite, and death is simply the limit of existence. This may occur from shock in which this point is precipitated, and a sudden arrest of all these cell processes follows.

The utility of this process of change called death is a part of natural selection which further increases the preservation and distribution of new structures. It also enables the germ cell to enter into new forms of life, and escape from limitations which have bound it down. Artificial death may appear at any stage of the organism, and the vital forces be overwhelmed and unable to continue cell life, and both somatic and germ cells perish.

The duration of cell life is governed by fixed conditions within itself, and the surroundings and their influence over it. The germ life goes beyond this, and is only limited by conditions essential for its perpetual existence. Death is inherent for cell life; an eternal prolongation of these cells would impede and be injurious to the organism. In the higher animals this prolongation of cell life takes place long after reproduction has occurred, obviously to assist and protect the new organism. Also the period of reproduction is greatly extended in the higher species, to provide against all possible danger of extinction.

The theory of the possible continuance of cell life in the organism, by some form of drugs that would suspend activity, is an impossibility. Each cell has a separate existence of its own, which comes to an end and is replaced by others, uninfluenced by conditions only to a limited extent. The natural duration of life is only the measure of this existence in the cell colonies of the organism.

The germ cells continue a cycle that approaches nearer to immortality than anything we know of in nature. The molecular structure of somatic cells becomes worn out and dies, but the same structure of germ cells goes on repeating itself, beginning again anew as long as favorable conditions continue.

Like the circulation of water on the earth, it is evaporated, condensed into clouds, falls to the earth as rain, and continues the never ending cycle. Interruptions may occur at different points, and its circulation vary. So the ceaseless round of protoplasm may halt and change for a moment, only to go on again in the same course. The mortal cells have their cycles and are replaced by others, and this continues until the larger cycle of cell colonies is completed and what we call death follows, and the form or organism disappears.

This is the grand process of evolution in which life and death are inseparable, essential, and parts of the race progress.

MENTAL CAPACITY SUFFICIENT TO SUSTAIN MARRIAGE IN LAW.

Every valid contract requires the concurrence of two or more persons, each of sufficient mental capacity to give an intelligent consent thereto. This requisite applies as well to matrimonial, as to commercial and property contracts. The old doctrine that the mind, though it has different faculties, is one and indivisible, and that, if any of its parts are disordered, or if it is in any way diseased, or its healthy operation in any function disturbed, it is an unsoundness of mind which affects the whole organ, and renders the person legally of unsound mind, and incapable of entering into a civil contract, is no longer recognized. The question under the present state of the law is not whether the mind of the party was in any way affected or impaired, but whether, such being the case, the impairment or defect of the mind operated upon or inspired the act which is the subject-matter of consideration; for, admitting that the party was subject to some delusion, or that his mind was in some faculty impaired, if the act challenged is not traceable to, and has not probably been influenced by the defect of intellect, but is the result of the action of the unimpaired faculties of his mind, it will not be disturbed. These statements are made by the court of chancery of New Jersey in the recently decided case of KERN *v.* KERN (26 Atlantic Reporter 837) brought for the annulment of a marriage as void for want of mental capacity in one of the contracting parties. The court in a very lengthy and carefully prepared opinion, wherein it reviewed many authorities on the subject, further says, among other things, that the test in the case of ordinary contracts is, did the person whose act is brought in judgment possess sufficient ability at the time he did the act to understand, in a reasonable manner, the nature and effect of his act, or the business he was transacting? If he did, his act is valid. He may have been old or enfeebled by disease, or

irrational upon some subject, yet, if he had sufficient ability to comprehend in a reasonable manner what he was doing, his act will bind him. This is the rule in the absence of fraud. And the weight of the authorities is that no greater, if as much, mental capacity is requisite to make binding matrimonial, than is required to make ordinary business contracts, or a valid testamentary disposition of one's estate. There seems to be less difficulty in bringing to a test the acts of a person whose mind in its normal condition had been sound, but which has subsequently become affected, and subject to some delusion, than to establish any test with reference to the acts of one whose mind is weak or undeveloped; for in the first class the characteristics of the mania or delusion will probably make themselves apparent in the act, while as to the other, the border line between mental capacity and imbecility is so dim and indefinite that it is often difficult to determine whether the act has been guided by the light of reason, or done within the shadow of a darkened intellect. The abstract opinions of medical experts as to a person's mental condition may be entirely satisfactory in the consideration of the subject from a medical standpoint, but, in the solution of questions involved in judicial investigation, they must be tested and qualified with reference to the facts on which such opinions are based. A man may be mentally unsound in a medical point of view, from certain conditions which exist, which would not in a legal sense relieve him from responsibility. He may be subject to mania, and medically of unsound mind; yet, if the peculiar phase of mania had no influence upon the act brought in question, such act is not in the law invalidated. He may be an imbecile, and medically of unsound mind, but, if he has sufficient mind to reasonably understand the act, which is brought in question, he is legally competent. Each case must be decided on its own circumstances, and the ability of the party to understand can in no more satisfactory way be ascertained than by referring to his conduct in other transactions. Without attempting to formulate a rule to be adopted as the test of mental development of a person afflicted with congenital imbecility necessary to exist so as to bind him in making a contract, recognizing that each case must be governed by its own incidents, it would seem that if a person, in a general way, had an appreciation of the conditions of the marriage state, and understood the rights and responsibilities which attach thereto, and regarded the marriage ceremony as the incident which effected a marriage between himself and a certain woman, he should be held bound by a contract which he entered into under those conditions. There was in this case, as shown by the evidence, a person of weak intellect; one who at times might not express himself coherently, but who, until he was 35 years of age, had been permitted by his family to take care of himself and his property; one who had contracted no bad habits, and who had so taken care of his estate that it had been preserved, if not increased; whose memory was good; who, in making a bargain, manifested shrewdness and judgment; and who, in reference to the marriage in question, conducted himself without impropriety or peculiarity; a person who seemed to have had a proper conception of the ceremony which was being performed, and to understand the rights, duties and responsibilities which attach to the marital relation. While the conditions were no doubt sufficient to clear him as of unsound mind from a medical standpoint, the court did not think he could be said to be legally irresponsible, and decided that it would not be justified in annulling a marriage entered into under such circumstances, because of the alleged weakness of intellect of a contracting party.

PAN-AMERICAN EXCURSION.

[From the Philadelphia Press.]

Philadelphia, always hospitable to visitors, gave a particularly gracious reception September 9th, to the distinguished delegates to the recently adjourned Pan-American Medical Congress. In the party were nearly 100 medical men, and a few of them were accompanied by their wives. The event of yesterday which will be longest remembered by the delegates was the reception held in their honor at the University of Pennsylvania by Provost Pepper, the trustees and faculties of that institution of learning.

The grounds and buildings of the University were thrown open to the visitors for inspection when they arrived at 3:30 o'clock, and under the guidance of Dr. Pepper they visited every department, lingering longest in the medical and surgical departments whose splendid equipment they much admired. After the inspection of the buildings the members of the party were grouped about the entrance to the library building and photographed. They were then invited inside and a collation was served. When coffee was brought in and cigars were lighted, Dr. Pepper rapped on the table with the handle of his knife and the talking ceased. He stood up, and called for Dr. Chas. A. L. Reed of Cincinnati, to come forward.

A PLEASANT SURPRISE FOR DR. REED.

Nearly every one except Dr. Reed knew what was about to take place, but he up to that time had been enjoying himself unsuspiciously. He approached Dr. Pepper in some embarrassment, not divining exactly what it all meant. Dr. Pepper laid his hand affectionately on the shoulder of Dr. Reed and in well chosen words praised the work of that gentleman in bringing about the convention. He gave Dr. Reed a larger share of credit for the success of the convention than any one else, and then he said: "Your fellow-delegates of this convention decided that the occasion should not pass without some expression of our gratitude to the man who has done so much of the work which made it successful, and in order that in future years he and his descendants may remember this Congress we have prepared this piece of plate (uncovering a silver salver) on which we have had inscribed these words: 'Presented to Dr. C. A. L. Reed of Cincinnati, O., secretary general, by members of the First Pan-American Medical Congress, Washington, D. C., September 4-8, 1893, to commemorate the brilliant suc-

cess—largely due to his faithful and devoted efforts in its organization—of that important occasion, when, for the first time, the representatives of the medical profession of the Western Hemisphere met in council for the advancement of science and the promotion of the public health.'"

Dr. Pepper handed the salver to the surprised secretary general amid the hearty cheers of all the delegates. Dr. Reed said, in accepting it, that a salver was used for handing food and drink to those who are hungry and athirst, and he would always look upon this particular salver as being laden with the friendship of his colleagues.

Dr. A. M. Owen of Evansville, Ind., then covered Dr. Pepper with confusion by making a retaliatory speech, in which he said a number of pleasant things about the Doctor, and finished by presenting him with an ivory gavel suitably inscribed. Then the speech making became general in a diversity of languages. After the reception the delegates returned to their hotel thoroughly tired, for they were sight-seeing from early morning.

They arrived at the Broad street station from Baltimore at 4:30 A. M., and remained in their sleeping car until 7 o'clock, when the Committee of Arrangements from the University, whose guests they are during their stay in Philadelphia, called for them at their coach. The committee consisted of Dr. John Marshall, chairman; Drs. James W. Holland, Ernest Laplace, Charles W. Dulles, Hobart A. Hare, E. E. Montgomery, Edward Martin, James W. Ruders and De Forrest Willard.

The party was conducted to the hotel, passing through the court of the city buildings, where a stop was made to inspect the bronze statue of William Penn. It is told of one of the Washington doctors that he pointed out the statue to the foreign gentlemen as being that of the great Dr. Benjamin Franklin. The Washington guide afterward gave as his excuse that he could not see distinctly at such an early hour of the morning.

RECEIVED BY THE MAYOR.

After breakfast at their hotel the visitors were conducted to the city hall, where Mayor Stuart welcomed them. In his speech the Mayor said:

"*Gentlemen:*—Philadelphia feels herself honored by the presence of such a distinguished body as the Pan-American Medical Congress, yet it seems particularly appropriate that you should so visit us, for the early—in fact, almost the entire—history of our city is closely allied to the history of medicine in this country. While we regret that your stay with us is somewhat limited, we hope that while you are here you will not only see all that pertains to the study and history of medicine, but that you will also see some of the material prosperity and industries of this great American city, and it affords me much pleasure in the name of the people of Philadelphia and on the behalf of the medical profession to extend to you a most sincere and heartfelt welcome to the City of Brotherly Love, hoping that your visit may be agreeable to you, as the remembrance of the same will always be to me."

After going over the public buildings the visitors repaired to the mint, where they saw the several processes of coining money; then they went through the Jefferson Medical College, and Independence Hall, from the latter place going to the Walnut street wharf, where several tugs took the party to Cramps'. They were cordially received by Henry W. Cramp, who conducted them over the battle ship *Indiana*, which is the nearest finished, and then through boiler and machine shops. At noon lunch was served in the company's offices. Then they went aboard the tugs and took a trip to League Island, where they had a look at the new United States cruiser, *New York*.

From League Island the party returned to the city, and made a hasty tour of other places of interest, taking in the Medico-Chirurgical College and the Drexel Institute, and then to the University of Pennsylvania.

WILL INSPECT REEDY ISLAND.

Saturday the delegates will leave from Broad street at 9 o'clock A. M., for Newcastle, Del., where they will go aboard the revenue cutter *Hamilton*, and go down the bay to Reedy Island, where they will be received by Surgeon General Wyman, who will show them around the United States quarantine station. They will return to Philadelphia at 4:30 o'clock and will leave at midnight for New York.

The personnel of the party is as follows: Samuel S. Adams, chairman; M. C. Y. Valle and son, Rafael Lavista, E. R. Garcia, Jose Myta, Juan Zavata, Domingo Owananos, J. E. Monjaras, Francisco Marin, J. Martinez del Campo, Louis G. Munez, A. Contreras, L. E. Ruiz, E. Liceage, R. Ycaza, Thomas Noriega, Angel Gaino, Fernando Zarraga, Manuel Guiterrez, Roge Macruzet and A. W. Fernandez of Mexico; Thomas Casas y Marti, Jose Clairie, Enrique Lopez and Antonio Touer of Cuba; F. A. Risyuez, Rivero Saldivia and David Lobo of Venezuela; Alfredo Garces, Guillermo V. Poredes and Daniel Gutierrez of Colombia; Pedro Lagleyze and Juan Mendieta of the Argentine Republic; J. C. Phillippo and R. S. Surton of Jamaica; Augusto Cemecu and V. L. Gilles of Haiti; Jifan Padilla of Guatemala; Juan I. Ulloa of Costa Rica; Juan Hernandez of Porto Rico; Baven Rake of Trinidad; Florestan Aquilar of Spain; Dr. Wolve of Scotland; Drs. Holton of Vermont; Cushing of Boston; Rohé and McShain of Baltimore; I. N. Love of St. Louis; J. V. R. Hoff U. S. A.; J. M. Anders, Ernest Laplace, E. E. Montgomery and S. A. Martin of Philadelphia; Drs. Cook, Kleinschmidt, Eliot, Johnson, Barker, Bowen, Wagonder, Acker, Morgan, Ober, Guiteras, Walton, Wellington, Happer, Jules Guthridge, J. Porces and R. M. Larner of Washington, D. C.

The party is made up of many who are not only representatives of the profession, but are distinguished citizens of their respective countries. Dr. Rafael Lavista of the City of Mexico is the personal physician of President Diaz, sustaining practically the same relation to him that Dr. Bryant sustains to President Cleveland. Dr. Carmona Y. Valle is the distinguished dean of the faculty of the National University, and is perhaps the most renowned medical practitioner of the republic. Dr. Eduardo Liceaga is the president of the National Council of Health of Mexico, and is possessed of extraordinary power in the enforcement of quarantine and other sanitary regulations. Dr. Juan J. Ulloa is the official representative of the government of Costa Rica. He is a graduate in medicine from New York, is highly influential in the government councils of his own country and is thoroughly American in all of his sympathies. Dr. Duenas is a prominent professor in one of the leading medical schools of the United States of Colombia. Dr. John C. Phillippo is the president of the Legislative Council of Jamaica, and is concededly the most distinguished citizen of that colony. Dr. Munez of Peru, is a prominent officer in the army medical service and stands high in governmental circles. Dr. Francisco A. Risquez of Caracas, is the practical censor of the medical profession of Venezuela, and is especially delegated by his government to participate in the hygienic deliberations of the Congress. Dr. Pedro Lagleyze, the delegate from the Argentine Republic, is a prominent editor and an eminent ophthalmologist of Buenos Ayres. Dr. Clairac is the Surgeon General of the Spanish army in the West Indies.

"The significance of these facts," said a member of the Congress, "is that in entertaining this distinguished delegation the citizens of Philadelphia are securing the friendship of people who are capable of largely controlling the course of affairs in their respective countries. Further reciprocity will be much more easily effected in the future than before the friendship of these gentlemen had been secured through the side avenues of fraternal feeling and professional interest."

DOMESTIC CORRESPONDENCE.

Dr. Hammond Replies to His Critics.

Dear Sir:—In the last number of the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION there is a communication from Dr. D. R. Brower transmitting the details of an analysis made of cerebrine and medulline, said to have been prepared by my formulas. Of course I have no assurance that the specimens examined were really what they purported to be, neither does Professor Delafontaine, who made the analysis, so assert. He examined what was given him and I have no disposition to question his honesty in the matter.

I have only to say:

1. That the cerebrine as prepared by my process is a solution obtained by macerating the brain of the ox and the contained blood for from six months to a year in a mixture of equal parts of absolute alcohol, glycerin, and a saturated solution of boric acid in water, with frequent agitation and the application of strong pressure. As Professor Delafontaine does not mention either the alcohol or the solution of boric acid, but declares that the excipient of the sample he examined "was chiefly glycerin," it is quite certain that the specimen given him was not prepared by me.

2. But admitting that the sample was genuine, his discovery of a substance, either "nitroglycerin or some very closely allied product which does not preëxist in the ox brain," was partially anticipated by me several months ago, as you will perceive by the following quotation from my original paper on "Certain Organic Extracts," published in the *New York Medical Journal*, January 28, 1893:

"It may be that the mixture of boric acid, alcohol and glycerin exerts a metamorphic influence and causes the formation of a ferment having the power of restoring to the weakened brain or other viscus the lost or impaired power of assimilation."

3. It was fully anticipated in a paper entitled "A further Contribution to the Subject of Animal Extracts," published in the *New York Medical Journal*, July 1, 1893, as the following quotation shows:

"The immediate effects of the cerebrine and of most of the other extracts are those indicating vaso-motor disturbance, and are so far similar to those produced by the nitrite of amyl and trinitrin or nitroglycerin. It is of much longer duration but not so intense as that produced in the average person by a drop of a 1 per cent. solution of nitroglycerin. I have experimented largely upon myself and others with fresh extracts of the brain mixed with solutions of nitroglycerin of various strengths, and I am convinced of the great difference in the action of these mixtures and of cerebrine prepared according to my formula. It has been observed by those who have employed the extract of the thyroid gland in the treatment of myxœdema that even more severe symptoms usually follow the administration. These are in the form of giddiness, headache, faintness and an apparent tendency to convulsions, and occasionally it has been found necessary to suspend the treatment on this account. Similar effects to those produced by cerebrine are generally observed from the hypodermic injection of the extract of nerve substance prepared by Dr. Gibier. I have never in a single instance—and I have used them many hundreds of times—observed the slightest alarming effect from the use of the animal extracts prepared according to my method.

"I have sometimes thought that the combination of glycerin, alcohol and the highly nitrogenous substances from which these extracts are made might result in the production of a subject analogous to nitroglycerin, and in my first communication on the subject to the *New York Medical Journal* I threw out the suggestion of a secondary product being formed. As I have said, however, the thorough chemical analysis which is now being made will, I hope, dissipate the uncertainty which necessarily exists relative to the exact composition of these extracts."

This, to some extent at least, takes away from Dr. Brower and Mr. Baker the honor of having made an original discovery relative to the physiological effects of cerebrine.

4. The fact that Professor Delafontaine detected no organic matter is sufficient to enable me to assert positively that the specimen submitted to him was not prepared according to my formula. Every analytical chemist will admit that it would be impossible for finely comminuted brain substance and blood to remain several months in contact with the menstruum I have mentioned without parting with some portion of their organic constituents.

5. Either Professor Delafontaine's analysis was very superficial and inexact, or the mixture he examined was glycerin to which nitroglycerin had been added. It certainly was not cerebrine.

6. It is impossible for Professor Delafontaine, or any other chemist, to say what would be the results of the long continued maceration of brain substance and blood in alcohol, glycerin and solution of boric acid. He may express his non-belief "in some putrefactive process, generating a nitrate, in the Hammond product," and I fully agree with him in this, for there is no putrefactive process, and consequently no ptomaines. But should he declare that no leucomaines could be generated in such a mixture, he would be exhibiting a degree of temerity which I venture to hope he is not capable of showing. He can not be unaware of Schreiner's discovery of spermine, and he doubtless himself has seen crystals of this substance, as I have for many years, on nervous tissues preserved for several months in alcohol.

7. And I thoroughly agree with him when he says: "On the other hand, a sample of cerebrine made by another firm proved to be physiologically inert, and utterly failed to give any of the color reactions described in the foregoing lines."

8. My laboratory is at all times open to the inspection of chemists and physicians, and specimens of the extracts, taken directly from the vessels in which maceration is going on, are at their disposal for such examination as they may see fit to give. Yours respectfully,

WILLIAM A. HAMMOND.

Washington, D. C., Sept. 2, 1893.

Hughes—Moyer—Hinde—A Correction.

To the Editor.—Sir:—In the current number of the JOURNAL appears the "Address of the President of the Section on Neurology and Psychiatry of the Pan-American Medical Congress," which I have just read with interest and profit. As a matter of fact, however, I wish to correct that which concerns myself. In referring to the work of my friend, "Moyer, the tireless," Dr. C. D. Hughes (p. 387) gives him the exclusive credit of reporting the first case of "Periodically Recurring Oculo-motor Paralysis" in this country, and in parenthesis refers to the *Medical Record*, 1887. The facts of this case are as follows: The case was referred to me by my friend Dr. D. O'Shea, and recognizing it as of rare and special interest, I showed it, in my regular work, at Prof. Holmes clinic at Rush Medical College, and later at the neurological clinic of Prof. Lyman, who also recognized the rarity of the case. It was first seen by Dr. Moyer at the latter clinic, and he asked to share with me in the report of the case, to which I unselfishly agreed. It still continued to be my case, however, as will later be evident. Together we prepared the first paper. When it was ready Dr. Moyer asked permission to read it before the Chicago Medical Society, of which I was not then a member. I agreed to this, expecting, of course, an equal division of praise or blame would be shared by both of us. Dr. Moyer, however, inadvertently left me out of the paper and the case altogether, though I was

present at the meeting as an auditor—a surprised auditor, I admit.

The paper was then turned over to me and I sent it for publication to the *Medical Record*, and it appeared in the issue of September 24, 1887, as a joint report of Dr. Moyer and myself. The case continued solely under my observation, however, and without the knowledge of Dr. Moyer, I wrote a second paper on the case that was forwarded to the *Medical Record* and published in the issue of October 22, 1887, a full account of which may there be found (pp. 536-538). Silence may be a great virtue, and hence has been long-lived, but I feel that credit ought to be divided in this instance, and I request you to kindly publish this communication.

ALFRED HINDE.

ASSOCIATION NEWS.

Loyal to the American Medical Association.—An editorial in a current issue of the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION takes occasion to point out that the statements published in the JOURNAL immediately after the annual meeting this year have a tendency to belittle the affairs of the JOURNAL and also of the Association.

The editor says that the reason of this is not on account of what was published, in which case there would be no need of an explanation, but that certain more or less unfriendly journals to the Association have published and given wide circulation only to parts of the editorial mentioned, and not the whole article.

Dr. Hamilton, the present editor says, that at the last meeting there was an increase in membership of 273, and in the last month, the membership by application has brought the increase up to 300.

Also; there has never been a time when the JOURNAL had so large a bona-fide mail list, and there has never been a moment when there was not money in the treasury; more than sufficient to meet any possible contingency. There have been added eight pages of reading matter, and the outlook for the publication has never been brighter than at present.

The *Omaha Clinic* should dislike exceedingly to be classed as one of the "not over-friendly publications."

This not over-friendly spirit and the spirit of indifference is not manifest in the West; if there is such it must emanate from somewhere "down East." There may be sporadic cases in the West, but their ideas have been brought with them from the other quarter.

We regard the American Medical Association as America's only truly national medical organization, and in proof thereof we adduce that it is only here that we can expect to find those questions of vital interest to the profession fearlessly discussed by representatives of all parts of this country. The fact that the American Medical Association stands in this broad manner to the profession, necessarily lays it open to the sharp attacks of individuals and more close organizations.

The *Omaha Clinic* regards it as its imperative duty to instruct societies all along the line in its influence, to lend their aid to the Association to build up the profession.

When we differ with the Association it is by virtue of an honest interest in it for that which we think is best for the profession and to be so held by its representative organization.

Never has this journal differed with intent to disparage, or to lend aid, or to further the interests of any organization to take its place.

The constitution of the AMERICAN MEDICAL ASSOCIATION is open to a change when the profession demand it by a legitimate vote, and there is no constitutional democratic government on earth in any way different from this. We truly hope that next year the ASSOCIATION will take up the issues which seem so urgently pressing—the remedy, when necessary, is in the hands of the members—and show this country, East, North, South and West by a majority vote as to what is the present will of the profession to be stamped in the year 1894 on our medical government.

To do this, according to the advice of ex-President Hunter McGuire we should like to take this occasion to point out that, if as so recommended, a fair opinion be had from all sections of our country, well represented, in changing the constitution, and also that which Dr. Roberts of Philadelphia, declared is a part of it; namely the code, then by all means something must be done toward placing the date of meeting for San Francisco in June, and not the first week in May (as the constitution of most State societies require that they meet not earlier than May) and the State societies will be able each to voice its opinion on the issues, which when engrafted upon the AMERICAN MEDICAL ASSOCIATION, will certainly show to the indifferent East and the interested North, South and West, whether the ASSOCIATION is America's representative body and represents the views of the American profession.—*Omaha Clinic.*

SOCIETY NEWS.

The American Medical Editors.—The American Medical Editors' Association met in Washington, in the large banquet hall of the Arlington hotel on Monday, September 4. The President, DR. C. H. HUGHES, of the *Alienist and Neurologist*, read a short and pithy address of welcome to the invited guests, and the versatile vice-president of the American Medical Association. Dr. I. N. Love of the *Medical Mirror*, was toast master of the evening. To the toast of the "President of the United States," the Hon. J. Sterling Morton, Secretary of Agriculture, responded in a most happy manner. "The Secular Press," was responded to by Hon. Frank Hatton, editor of the *Washington Post*; "THE AMERICAN MEDICAL ASSOCIATION," by President J. F. Hibberd; "The Pan-American Medical Congress," by President Pepper; "The Medical Press," by Dr. Hobart A. Hare of Philadelphia; "The Surgeon General of the Army," by Ex-Surgeon General Hammond, General Sternberg being absent; "The Surgeon General of the Navy," by Ex-Senator John B. Henderson of Missouri, who gave an interesting account of the purposes and objects of the Pan-American Congress over which he presided last year; "The Public Health," and "THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION" by Dr. John B. Hamilton.

The volunteer speeches brought out by the skillful touch of the toast master, were many and excellent. Among the most notable of the after dinner volunteer speeches were those of Dr. Ernest Hart of the *British Medical Journal*, Dr. Phillipot of Jamaica, Dr. Abram Owens of Evansville, and Dr. Garcelon.

In the intervals between the speeches, Major Stofer, the well known Washington correspondent, rendered some pleasant musical selections, and Mr. Seabrook the actor gave one of his characteristic recitations.

As the evening waned, it *dawned* upon some of the invited guests that American medical editors knew how to enjoy themselves, and take a few hours of recreation, as well as any other class of Pan-American citizens.

Pan-American Comments.—The Section meetings were well attended, the papers excellent, and management as good as should have been expected. There were some papers dislocated, but they may easily be placed in proper position when the Transactions come to be printed. The practice of subdividing the general Sections into many independent Sections, is one the next committee on organization will do well to avoid. There were too many papers in several Sections to allow time for intelligent discussion of all of them, and at the close many excellent papers were read by title for want of time to hear them either in full or by abstract.

The American Medical Association having invited its Pan-American guests did its full duty by them. A glance at those in attendance at the Sections, showed the familiar faces of the members largely in excess of any others, and to those members the officers of this Congress confidently appealed for support; that they were not disappointed, the magnificent success of the meeting shows.

It is pleasant to note that soon after the close of the meeting the late Secretary General Reed received a graceful recognition of his untiring labors, at the hands of his associates, and that ex-President Pepper, and the other general officers of the Congress, if not furnished with a silver token, will yet have the affectionate and grateful thanks of their medical brethren, embalmed on the record pages of this now historic Congress.

Medical Congress Adjourns—End of the Pan-American Meeting.—RESOLUTIONS ADOPTED REGARDING QUARANTINE—THE DELEGATES START ON A TOUR THROUGH THE COUNTRY.—Washington, Sept. 8.—The final meeting of the Pan-American Medical Congress was held this morning. The Rev. Dr. Byron Sunderland, of the First Presbyterian church, the oldest pastor in Washington, opened the proceedings with prayer. Addresses of thanks and congratulation on behalf of their respective countries were made by Dr. Garcias of the United States of Colombia, in Spanish, and by Dr. Ferd C. Valentine, ex-Surgeon General of the Army of Honduras, in English, and by Prof. Rafael LaVista of Mexico.

Secretary General Reed read the report of the International Executive Committee. The committee accepted the invitation of the Mexican delegates to hold their next meeting of the Congress in the City of Mexico. The date will depend upon the meeting of the International Congress in Europe. The various recommendations by the several Sections were generally adopted by the committee. The most important exception was the one advising a temporary suspension of immigration from European countries in which cholera is now prevalent. It was deemed best, the report stated, not to consider this resolution at the present time. Thanks were given to President Cleveland, the Congress of the United States, the Surgeons General of the United States Army, Navy and Marine Hospital Service, the officers of the Congress, the local Committee on Arrangements, the press and the railroads for their efforts to make the meeting of the Congress a success. The report was adopted.

Dr. Gihon presented the following resolutions, which the Section on Hygiene, on motion of Dr. Shakespeare, had adopted:

Resolved, That the thorough disinfection, without discrimination, of every piece of baggage, dunnage or article of personal effects belonging to the immigrant classes and to the crews of immigrant ships, and the exaction of scrupulous cleanliness of all vessels arriving at American ports, should be rigidly enforced at American ports, supplementing and enhancing the protective value of similar treatment at the ports of departure, especially at times when cholera exists in Europe, as a sanitary measure, second only in efficiency and importance to the temporary suspension of immigration.

Resolved, That the habitual and thorough disinfection of all personal effects liable to carry contagions of immigrants to the American hemisphere, and of dunnage of crews of vessels carrying these immigrants from any quarter of the globe, and the exaction of scrupulous cleanliness of all vessels arriving at American ports, should be enforced at all times, as the most efficient means of greatly lessening the introduction into this hemisphere of the seeds of various contagious diseases which are now and have been in the past almost constantly conveyed by the immigrant classes and distributed widely among the populations of this hemisphere.

These resolutions were referred to the International Executive Committee. Dr. Montezambert of Canada, stated that that country had already put into effect the recommendation of the resolutions regarding the disinfection of immigrants' baggage arriving at her ports.

On behalf of the visiting delegates and guests of the Congress, Dr. John C. Phillippo of Bermuda, Professor Ernest Hart of England and Dr. Rafael Lovisto of Mexico, returned their thanks for the cordiality and bounteousness of their reception and entertainment while in Washington. Dr. Phillippo paid a warm and eloquent tribute to the memory of George Washington, whom he designated as the greatest character in history, which the Congress rapturously applauded.

President Pepper then, in a few well chosen words, expressing the purpose of those connected with the Congress to stand by it, develop it and make it more useful to the members of the profession throughout the continent, declared the Congress adjourned, to meet in the City of Mexico either in 1896 or 1897.

At 1:30 o'clock this afternoon the foreign members of the Congress, with the members of their families, accompanied by the Committee on Arrangements and officers of the Congress, left Washington over the Pennsylvania road for an extended trip through the Eastern cities, and thence to the World's Fair, as the guests of the committee, under the resolution of Congress inviting the attendance of foreign delegates. The trip will include stops in Baltimore, Philadelphia, New York, Boston, Saratoga, Niagara Falls, Detroit, Cincinnati and Chicago. Upon arrival at Chicago the 19th instant the party will separate.

The Second Pan-American Medical Congress.—The affairs of the next Pan-American Medical Congress are placed in the hands of an international executive committee, one member from each country, and that committee decided that the next meeting shall be held in the City of Mexico, at a time yet undetermined. It is probable that the winter season will be selected and that the Congress will be held five years from this date, with our accomplished colleague, PROF RAFAEL LAVISTA of the University of Mexico, as its President.

The proposed change of time to five years, it is urged, will not only give time for complete organization and results of special experimentation but will cause the holding of the next session in the year following the International Medical Congress. Others are of the opinion that the meeting should take place in 1896, but the question is one that only our Mexican confrères can decide.

The American Electro-Therapeutic Association held the opening session of its third annual meeting on the 12th at the Apollo hall, Central Music Hall block. The President, Dr. Augustin H. Goelet of New York, called the meeting to order at 9:30 A. M., and delivered the opening address, in which he spoke of the influences governing the progress of electro-therapeutics and congratulated the Association on its growth. The afternoon session opened at 2:30 P. M. Several papers were read and discussed. That which created most interest was the paper read by Prof. William J. Morton, M.D. of New York, on "The Nutritional Effects of Statical Electricity Considered in Relation to High Frequency and High Currents and Permeability of Di-electrics to Such Currents." Prof. Morton stated that the currents in question are those which have recently become known through Tesla's experiments.

Other papers read were:

"Electrolysis in Tumors of the Bladder," by Dr. Robert Newman, New York; "Electro-Medical Eccentricities," from H. Newman Lawrence, M.I. E.U. of London, England; "The Action of the Continuous Current within the Living Tissues, as Distinguished from the Local Polar Action," by Prof W. J. Herdman, M.D., Ann Arbor, Mich.; and "Metallic Electrolysis," by Margaret A. Cleaves, M.D., New York.

At the evening session, which commenced at 7:30 P.M., the following papers were read:

"Further Observations on the Treatment of Goitre," by Charles B. Dickson, M.D., Toronto; "Notes upon Some Uses of Galvanism in Surgery," by D. B. D. Weaver, M.D., of Reading, Pa.; and "Report of a Case of Ascites Cured by Galvanism," by Halford Walker, M.D., Toronto.

A reception was given at the Great Northern hotel from

9 to 11 in the evening by the Committee of Arrangements to the members of the Association and the members of their families accompanying them.

Pan-American Medical Congress.

REPORT OF THE PROCEEDINGS OF THE SECTION ON MILITARY MEDICINE AND SURGERY.

The pamphlet program of the work of this Section intimated that on the afternoon of Tuesday, September 5, an informal meeting would be held in the Army Medical Museum for the purpose of inspecting the collections contained in this Museum and the Library of the Surgeon General's office. About fifty members responded to the call and an hour and a half was spent in examining the building, its show rooms, book cases and laboratories under the guidance of the Librarian and Curator, Major John S. Billings, U. S. A. The total number of specimens now in the museum is 32,265, and this number is steadily increasing, 1,040 having been added to it during the past year. The library contains 110,650 books and 173,000 pamphlets.

At 11 A. M. of Wednesday morning, September 6, the Section was called to order by the Executive President, Surgeon General STERNBERG, U. S. A., who opened the session by expressing his gratification at seeing present so many medical officers of the regular army and National Guards, notwithstanding the fact that the Association of the Military Surgeons of the National Guard of the United States had met so recently in Chicago. He then delivered his address which we had the pleasure of submitting to our readers in our issue of September 9. After referring to the progress of antiseptic surgery and military sanitation he suggested the conditions essential to the de novo origin of hospital gangrene and erysipelas. Under certain conditions of lowered vitality, the result probably of the toxic influence of the ptomaines elaborated by putrefactive bacteria, a microörganism ordinarily of a comparatively harmless character may invade a wounded tissue and acquiring pathogenic virulence in its new environment may subsequently be capable of existing in healthy tissue, which it destroys, and of spreading the infection of disease by the permanence of its acquired properties. Antiseptic methods of treatment may be relied on in future wars to reduce the number of traumatic infections just as disinfection may be depended upon to limit the specific febrile diseases.

To judge from the hearty applause which greeted the conclusion of the address, the views of General Sternberg were received with favor by the delegates and others who were present.

SURGEON GENERAL CHARLES SUTHERLAND, U. S. A. (retired) was then introduced. He described the organization of the Hospital Corps of the Army and the methods adopted for the education of its members and the company bearers in litter bearing and giving first aid to the wounded. As an illustration of the excellent results produced by these methods he referred to the record which the Hospital Corps had made for itself during the Sioux campaign of three years ago.

SURGEON GENERAL BERGEN of the Canadian Militia stated that in some of the Canadian regiments considerable progress had been made in teaching first aid and stretcher drill.

DR. BEDFORD BROWN of Alexandria, Virginia, a representative of the medical department of the late C. S. A., referred to his knowledge of the destitute condition of the medical department on the Southern side during the civil war. Gangrenous wounds in the field did well when isolated under tent flies and treated locally with hot water dressings and strong solutions of sulphate of zinc.

DR. P. S. CONNER of Cincinnati, Ohio, then read a paper on

LAPAROTOMY IN GUNSHOT WOUNDS OF THE ABDOMEN.

He cited the large death rate from penetrating wounds under expectant management. At one time such wounds were regarded as necessarily fatal. The reports from the great wars of the third quarter of our century show that from 65 to 92.5 per cent. of the cases coming under observation terminated fatally; but they formed only a minority of the whole number of such wounds, for many cases perished quickly on the field from hemorrhage. Of cases in which laparotomy was performed, Körte collected 64 with 42 deaths or 65.6 per cent.; Morton 110 with 74 deaths or 67.27 per cent; Barrow 112 also with 74 deaths making 66 per cent; Martin and Hare 129 with 86 deaths, 66.66 per cent; Coley 165 with 111 deaths, 67.2 per cent; but all these statistics are vitiated by the errors due to the suppression of unfavorable cases. In 174 cases collected by Dr. Conner and constituting all the laparotomies performed by fifty-five medical men who reported to him as having had personal experience of the operation there were 123 deaths or 70.67 per cent. Some of the published statistics indicate that the chances of a favorable termination are greater when operative procedures are not instituted; but many of the unoperated cases that are published and thus become embodied in the statistics are reported merely because their result was not that usually observed. One of the chief causes of fatality after operation is shock and this is proportioned to the duration of exposure during the operation. A certain and safe method of determining the place and number of the lesions is greatly needed. Insufflation is unreliable and sometimes injurious. Leaving out of consideration the cases in which there is profuse hemorrhage or external discharge of feces, urine or bile—cases in which operation is certainly called for,—the propriety of laparotomy must be determined according to Dr. Conner, by consideration, on the one hand, of the likelihood of the occurrence of septic infection if it is not done, and on the other of the probable amount of shock that may be expected to attend the operation, bearing in mind, meanwhile, the fact that the necessary manipulations of the laparotomy may be a determining cause of toxemia, in the breaking up of already formed protective visceral adhesions. When the wound has been made by a small ball, caliber 22 or less, especially if it is well above the level of the umbilicus, or, without regard to the size of the bullet if it is well out from the central line of the body, and it may reasonably be expected that its course has not been towards that line and if the patient's general and local conditions are good, abdominal section should not be made. When the symptoms indicate decided hemorrhage or fecal extravasation operative interference should be made at the earliest moment. When the bullet is of medium or large size and has in all probability passed through the area occupied by the small intestines or wounded the liver, spleen, kidney or bladder the operation should be performed; and even if peritonitis has developed its presence does not contra indicate the operation though it increases the gravity of the prognosis.

DR. VANDER VEER, Albany, N. Y., spoke of the great fatality of penetrating wounds of the abdomen during the civil war and of the more humane character of the wounds by the smaller calibers of to-day. He coincided generally with the author of the paper in his conclusions as to when the operation should or should not be performed.

DR. L. A. LA GARDE, U. S. A., in speaking of abdominal wounds from small calibers, considered that wounds inflicted beyond the explosive range would seldom call for operative procedure; but that at short ranges visceral injuries would probably be as great as with the larger bullets.

DR. BERNAYS of St. Louis, Mo., referred to the empty or full condition of the stomach and intestines as bearing on the necessity for operation. In closing the discussion, Dr. Conner urged the desirability of knowing the results of all cases of laparotomy, successful or unsuccessful, and requested those who knew of any unreported cases to inform him of the details.

At 2 P. M. the Section met on the green sward in rear of the Library and Museum Building, where a field hospital had been pitched as a practical illustration of some of the points that might be broached in the discussion on first aid announced as part of the program for the afternoon. All the members of the Section were present, with many delegates from other Sections. The Secretary of War and the Major General commanding the Army were also present, as interested spectators of Major Hoff's demonstration of hospital corps drill and army methods of giving first aid on the field of battle. A clear space in front of the tents had been roped in and was under military guard to prevent the crowd of curious onlookers from interfering with the proceedings of the Section. Major Hoff's detachment consisted of only eight men and a non-commissioned officer; one litter squad of four men from his own post, Fort Columbus, N. Y., and the other borrowed for the occasion from the detachment on duty at Washington barracks, D. C. The promptness, care and intelligence shown by these men in handling the members of the guard who acted as the wounded, demonstrated fully the efficiency of the army method of educating its corps of litter bearers. Wounds were dressed, hemorrhage controlled by tourniquet, and broken limbs put up in extemporized splints in a way that called forth commendation from every one. The drill was carried out in accordance with the program published in full in our issue of September 2, and at its close the delegates inspected the field hospital, which consisted of a dispensary tent, kitchen and dining room, tents of the medical officers and men and one hospital tent as a ward of six beds. Another hospital tent was pitched by one of the litter squads to show the delegates how promptly the accommodation of the field hospital could be extended. The time occupied in pitching the tent was four and a half minutes.

The Section then adjourned to the lecture hall of the National Museum, where its sessions were held, to continue the proceedings of the afternoon by a discussion on the methods of first aid, General Sternberg in the chair. Colonel Page summed up his criticism on the hospital corps in the sentence: "Skilled labor is better than unskilled labor." Colonel Irwin spoke of the difficulty experienced in getting the company bearers out for drill and instruction, and Colonels Alden and Forwood, in referring to this, thought it would be well to have all the men of the company instructed in the elementary parts of the drill. Major Huntington described the organization of the hospital corps and considered that it now was what it was originally intended to be, the nucleus around which in time of war we can gather the hospital men of the volunteer forces. Surgeon Beyer of the Navy, expressed his admiration for the able manner in which the first aid system had been elaborated in the Army, and regretted the absence of such a system in the Navy. Captain Woodruff spoke of the difficulties attending the operations of military surgeons in the field as compared with hospital work in civil life. Prof. Conner suggested that little is required for first aid. In many cases an antiseptic pad is all that is needful for twenty-four or forty-eight hours. Major Billings stated that after having seen the drills at Aldershot and St Thomas, he thought the exhibit of this afternoon was perfectly satisfactory as compared with them. Major Hoff closed the discussion by defending the system of company bearers. He had found no difficulty in getting them out for instruction or in teaching them afterwards.

A paper was then read by Capt. LOUIS A. LA GARDE, U. S. A., entitled:

ARE PROJECTILES FROM PORTABLE HAND WEAPONS STERILIZED BY THE ACT OF FIRING?—CAN A SEPTIC BULLET INFECT A GUNSHOT WOUND?

Captain La Garde's experiments authorized him to conclude that the majority of cartridges in original packages are sterile, and the majority of gunshot wounds are therefore aseptic so far as the bullet is concerned; but a septic bullet can infect a gunshot wound.

At 11.15 A. M., Thursday, September 7, the Section was called to order by Surgeon General Tryon, U. S. N. The first paper of the day, read by Colonel Irwin in the absence of its author was:

THE AVOIDANCE OF INTESTINAL DISORDERS IN THE FIELD,

by Brevet Lieutenant Colonel A. A. WOODHULL, U. S. A. In this paper the principal diarrheal causes were summarized as change of diet and imperfect cooking; the drinking of unsedimented, hard or malarious waters; alternations of temperature, and exposure to the conditions under which enteric fever becomes prevalent. As preventives a competent knowledge of field cooking; the use of an abdominal protector, such as is known in India as the cummerbund or cholora belt, and the protection of the camp from excretal foulness were strongly urged. In connection with the presidential address on the causation of hospital gangrene and erysipelas the following sentence in Colonel Woodhull's paper indicates the tendency in army medical minds to regard some of the so-called specific infectious diseases as resulting from the influence of insanitary conditions on the evolution of bacterial life. "I have long believed," he says, "that in the course of many bacterial generations, which may be included in a relatively short season, an innocent bacillus by its environment may become pernicious, and I see no reason why in the interest of safety this might not be adopted as a working hypothesis."

The paper was discussed by Colonels Irwin and Alden, Dr. B. Brown and Majors Huntington and Hoff. Colonels Irwin and Alden spoke of the advantages of post messes; Dr. Brown, of the liability of the illiterate volunteer soldier to intestinal disorders as compared with his educated comrade; Major Huntington, of the untrained company cooks of our army and the desirability of having the food of the soldier well cooked in times of peace as well as in times of war, and Major Hoff in this connection suggested a service corps of cooks, organized by and under the orders of the subsistence department.

The next paper read was by Dr. BROWN giving his personal experience in the results of good and bad sanitation in the confederate army. He described the insanitary conditions of camps in the confederate service in the early period of the war, and contrasted the non-efficiency from sickness in certain of these camps with the corresponding rates among troops living under an efficient sanitary government. The systematic æration of tent sites was represented as of the highest importance. Some interesting points were mentioned in connection with the prevalence of measles in the army generally, and of cerebro-spinal meningitis in camps at Raleigh, North Carolina. The latter disease was regarded as eminently infectious and required for its suppression the prompt removal of the sick to isolated wards. Diarrhea as due to faults of cooking also received its share of attention at Dr. Brown's hands; but the keynote of his paper was a call for systematic cleanliness as the most potent agent at our command in military or civil practice for the prevention and cure of disease.

DR. BROWN took the chair during the presentation of the next paper, which was on

THE CAUSES AND ORIGIN OF CONTINUED FEVERS IN NAVAL SERVICES,

by C. A. SIEGFRIED, Surgeon U. S. A. The studies and experience of this delegate led him to believe that all continued fevers are of similar origin in the first place, differentiating finally and becoming types only when the specialized microphytic elements have gained characteristic virulent properties and the power of transmitting them. In all forms of these fevers there is a constant blood change, eventuating in severe cases in disorganization, deposition of dissolved hematin, the cell protoplasm having lost cohesibility as a rule, the proteids of the blood being under the disintegrating influence of new substances circulating in that fluid—derivations of illy formed leucomaines and enzymes. We can not draw sharp lines between these fevers until the process has become far enough specialized to form types; the enteric lesion on the one hand with the association of the Eberth bacillus, and the putrid blood condition with exanthematous skin and depositary membrane lesions on the other. In Dr. Siegfried's opinion, the direction of the etiology of continued fevers is as pointed out by Murchison. Saprophytic microorganisms invade the system during periods of diminished resistance and lessened immunity; or, as suggested by Rodet and Roux, a homeless saprophyte acquires by contact with water new and infective properties. The bacillus coli commune assumes a toxic nature within the human organism, and becomes in fact Eberth's typhoid bacillus.

At the conclusion of this paper, Captain LA GARDE made some remarks on the difficulty of dealing with those fevers which, associated at first with distinct malarial types, become adynamic later in the season and mingled with cases having ulceration of Peyer's patches and all the characteristic symptoms of typhoid fever. Major Hoff indicated from his experience the typhoid nature of certain of the febrile cases generally spoken of as Rio Grande fever and mountain fever.

At the afternoon session General STERNBERG took the chair and announced a paper by DR. STEPHEN SMITH entitled

SOME FACTS BEARING ON THE CONDITION AND SERVICEABLENESS OF THE STUMP AFTER AMPUTATIONS IN THE LOWER EXTREMITY AT DIFFERENT POINTS AND BY VARIOUS METHODS.

The paper was read by Major HUNTINGTON in the absence of its distinguished author. Dr. Smith measured the amount of atrophy in a series of 157 amputations of the thigh and 287 of the leg, and found from a consideration of these measurements that: In the thigh the farther amputation is performed from the trunk the greater will be the atrophy of the entire stump, while on the leg the farther amputation is performed from the trunk the greater will be the atrophy of the extremity of the stump and the less the atrophy of the body of the stump. He found also that the method of amputation had its influence on the nourishment of the stump and correspondingly on the amount of atrophy. The methods which in the thigh give the least atrophy of the stump, both in its proximal and distal portions are the skin flaps and circular of the muscles, and the posterior flap. The latter method leaves quite intact the full vascular supply to the entire covering of the stump. In this respect it might well be regarded as the best method of operation in the thigh, but these advantages are so counterbalanced by the tendency of the flap to retain pus, its heavy and unsuitable position for transportation, etc., that it has but few advocates. The method by skin flaps and circular of the muscles gives results nearly as favorable as the posterior flap and much more favorable than by any other methods as the circular, the antero-posterior flaps, the lateral flaps, the anterior flap, or the rectangular flap. It is greatly preferable to the posterior flap method, both on account of the facility of drainage and the neat apposition and lightness of the flaps, thus adapting it to transportation. This same method gives the least atrophy in amputations of the leg as well as in those of the thigh. Ankle joint amputations bear direct pressure on the stump, and the tendons of all the muscles employed in locomotion retain their former or acquire new attachments and are immediately and constantly exercised in the movement of the limb. Amputations through the leg, at whatever point, never furnish stumps that take direct support; it is only when an artificial limb is accurately and skillfully adjusted that the purpose of even simple progression is subserved. Hence Dr. Smith's conclusions that "the stumps left after ankle joint amputations are far more serviceable than those resulting from leg amputation for unassisted locomotion," and "an artificial limb can be far more usefully applied to an ankle joint than to a leg stump."

In a paper entitled

AMPUTATIONS PROTHETICALLY CONSIDERED,

Mr. GEORGE E. MARKS announced that modern leg makers care nothing for "the point of election," as artificial legs can be made that can be worn on stumps of any length. Any stump that is capable of bearing weight on the extremity is preferable to one that can not. Syme's operation gives an end-bearing stump of the most favorable kind; and the methods of Pirogoff, Chopart, Lisfranc, Hancock and Hays are all capable of excellent prothetic treatment; but in every partial foot amputation care should be taken to prevent contraction of the tendo Achillis. A stump extending below the knee is preferable to one extending to the knee, provided the stump is capable of flexion and extension. If the stump is disposed to become extended and anchylosed it will be preferable to sacrifice the leg to the knee. A stump extending to the knee is preferable to a shorter one. The condyles and nodules of the femur should never be excised in knee disarticulations. If the patella can be placed in the inter-condylic space and properly secured, it is always desirable to do so.

Professor Charles Parker of Cleveland, O., discussed these papers, expressing surprise at the statements made in regard to amputations of the foot. He had been accustomed to look upon that point of selection as in many degrees the best.

Surgeon General HAMMOND, U. S. A., (retired) in his paper on

THE FETICHISM OF ASEPTICISM,

claimed that the days of antisepsis are numbered; that the washing of wounds with solution of corrosive sublimate or any other supposed germ killer, the ablution of the hands of the operator and the cleansing of his nails with microbicides, the soaking of the instruments in carbolic acid and other similar procedures are all utterly useless, except in so far as they tend to insure cleanliness, and in that respect they are inferior to soap and water. He stated his belief that in ten years or less we will look back on the antiseptic methods of to-day with as much scorn as we now entertain for the absurd use of the sympathetic powder of Sir Kenelm Digby. The remainder of his paper was mainly an extract from an old book giving an account of the first published case in which the powder of sympathy was employed.

THE LAWS OF GROWTH OF BACTERIA APPLIED TO ASEPTIC SURGERY,

was the title of the next paper which was read by its author, Dr. ROBERT REYBURN of Washington, D. C. The first point that attracted our attention in this paper was the, to us, peculiar application of the terms aseptic and antiseptic. We had been in the habit of considering the Listerian method as an effort to produce and maintain asepsis; and that this having been found to be cumbersome and unnecessary it had been gradually supplanted by our present antiseptic dressings. Dr. Reyburn, however, reversed the application of the terms in referring to the fact that "the theory and practice of antiseptic surgery as perfected by Professor Lister are rapidly being abandoned and the more perfect science and art of aseptic surgery is being substituted." He cited experiences illustrating the inefficiency and even harmfulness of germicides, including corrosive sublimate when used on living tissues. In surgical operations the only liquid necessary is recently boiled water. Instruments should be soaked in boiling water or exposed to a dry heat in an oven. Aseptic material should be used for ligatures and sutures. Then the wound should be dusted with iodoform, boric acid or subnitrate of bismuth and protected with idoform gauze and aseptic cotton.

"Ricochet Bullets," by Capt. CHAS. E. WOODRUFF, U. S. A., was next submitted to the Section, and was followed by "The Wounds of the Mannlicher Rifle in the Recent Civil War in Chili," by A. M. FERNANDEZ DE YBAVA, M. D. of New York city. The orifices made by the bullet were small slits; hemorrhage was slight; complications few and repair rapid.

In adjourning the Section sine die, General STERNBERG congratulated the members on having had a pleasant and profitable meeting.

New Officers, American Electro.Therapeutic Association.—On Thursday the Association elected W. J. Herdman of Ann Arbor, president; Franklin H. Martin of Chicago first vice-president; R. J. Nunn of Savannah, treasurer; Margaret A. Cleaves, permanent secretary.

NECROLOGY.

Dr. John Rae, LL.D., F.R.G.S.—This well known explorer of the Arctic zone was a graduate in surgery, in 1833, at the Edinburgh Royal College of Surgeons. Not long after graduating he received a commission as surgeon in the Hudson Bay Company. His death took place July 24, at his home in Kensington, London. The following brief account of the adventurous life of Dr. Rae has been abstracted from the *Lancet* and other English sources:

"He was a native of the Orkney Isles, and early in life made several voyages in the northern seas. In 1846 he commanded a small exploring party, which made a voyage of 900 miles to Repulse Bay, and wintered on shore there. Next year, with his companions, he walked 1,300 miles along the coast, of which he made a scientific survey, practically connecting the discoveries of Ross, in Boothia Felix, with those of Parry, in 1823, at the Strait of the Fury and Hecla. Dr. Rae's next important expedition, jointly with Sir John Richardson, in 1848, was in search of Sir John Franklin, coasting eastward along the Arctic shores, Wollaston and Victoria Lands, from the Mackenzie to the Coppermine River, after which Dr. Rae, with two men hauling sledges, traveled 1,350 miles to Winnipeg, now in the Canadian Dominion. He gained the reward of $50,000 for intelligence concerning Franklin. His third notable performance, in 1853 and 1854, was the exploration of the west coast of Boothia to Bellot Strait, completing the map between the surveys before made by Ross, Dease and Simpson. He was afterwards engaged in Greenland and in British Columbia, upon surveys for telegraph lines. In 1850 he published a 'Narrative of an Expedition to the Shores of the Arctic Sea in 1846 and 1847.' His name will rank among the Arctic explorers of the nineteenth century."

He also wrote papers on the transposition of boulders, and the saline matters of the sea, and contributions to the learned English societies.

Dr. George R. Sullivan of Flemington, New Jersey, died in the latter part of August. He was a native of Maryland, born there in 1836. When 23 years old he obtained his medical degree from the university of that State. He settled in New Jersey, and when the war broke out he became assistant surgeon of volunteers in the 15th New Jersey Regiment. He was afterwards surgeon to the 39th Regiment. He joined the American Medical Association in 1872.

MISCELLANY.

Abandonment of Fort Bidwell, Cal.—Improved railroad communications and the settlement of the country have of late years rendered unnecessary the continuance of a number of small military posts originally established for the protection of civil communities during their early struggles for existence. Apparently it is the growth of the settlement in Surprise Valley, in the northeastern corner of California that has led to the recent order directing the abandonment of Fort Bidwell; for the post and neighboring settlements are still 135 miles from the nearest railway station and are reached only by a tedious stage ride or a more tedious march. The valley, sixty miles long, is well watered and fertile, and has supplies of pine, fir and mountain mahogany in the gorges of the mountains which surround it. The post has been in existence for nearly thirty years and now, at the time of its abandonment is probably in better sanitary condition than at any previous period of its history. The quarters are comfortable frame buildings raised on masonry piers and lined with tongued and grooved lumber. Water is piped and distributed by gravity from an impounding reservoir on a mountain stream. Sewage is disposed of by irrigation on gardens which furnish an abundant supply of vegetables for the garrison. Sickness has always been at a minimum. Typhoid fever was at one time imported by recruits from Jefferson barracks, Missouri, but this was the only appearance of enteric fever at the station. In fact, Fort Bidwell was one of the posts at which a young medical officer had every facility for forgetting, in the course of a four years' tour of duty, all the knowledge that he had gathered prior to his graduation. No doubt a number of other military posts will soon suffer the fate of Fort Bidwell, as the policy for some time back has been to concentrate troops in large garrisons from which they can be dispatched by rail when their presence is required in other parts of the country.

The Heroine of the Crimean War.—Florence Nightingale recently celebrated her seventy-third birthday. Although a confirmed invalid, she is somewhat stronger than during the past two or three years. She still maintains an active interest in hospitals and nursing.

Cholera.—ROME, Sept. 11.—There has been a severe outbreak of cholera in Livorni (Leghorn), in a dirty quarter of the town named Venuzia. In this district yesterday 265 cases and several deaths were reported. The record in other infected places for twenty-four hours is: Naples, five deaths; Casino, four new cases, one death; Palermo, three new cases, four deaths.

Fourteen new cases and five deaths in the last twenty-four hours, are reported from Constantinople.

LONDON, September 13.—Another death from Asiatic cholera has occurred at Rotherham, in the West Riding of Yorkshire. The physician's report as to the two deaths at Retford, County of Nottingham, confirms the statement previously sent in these dispatches that they were caused by Asiatic cholera. A death that recently occurred at Gansborough is now declared to have been due to the scourge. A death occurred at Leicester Sunday, the symptoms being considered suspicious by the physician attending the case. An examination was made, which resulted in a certification that the death was due to Asiatic cholera.

Letters from the Crimea says that cholera is committing terrible ravages. Hundreds in the province of Taurida are dying daily. The official figures give thirty-eight deaths last week, whereas there were more than thirty deaths in two towns alone. The authorities have forbidden the tolling of bells in order not to cause a panic through the frequency of funerals.

LISBON.—The *Official Gazette* declares London and Liverpool to be suspected of infection with cholera. All vessels from both ports will be inspected rigorously.

Have Quarantined.—The State Board of Health has issued an order that all passengers out of Muncie, Ind., must show certificates of proper vaccination and that their baggage has been disinfected. This is to prevent the spread of smallpox, which is epidemic in Muncie.

Dr. Dewitt C. Patterson of Washington, one of the Trustees of THE JOURNAL, is seriously ill, and at the last meeting of the Board, resolutions were passed by the other members expressive of their sincere regret in learning of his illness, and their earnest wishes for his speedy recovery.

THE PUBLIC SERVICE.

Army Changes. Official list of changes in the stations and duties of officers serving in the Medical Department, U. S. Army, from September 2, 1893, to September 8, 1893.

A board of officers, to consist of Col. JOSEPH C. BAILY, Asst. Surgeon General; Major CALVIN DE WITT, Surgeon; and Major HENRY M. CRONKHITE, Surgeon, is appointed to meet at the call of the president thereof, at San Antonio, Tex., for the examination of such officers as may be ordered before it, with a view of determining their fitness for promotion.

Capt. HENRY S. KILBOURNE, Asst. Surgeon, will report in person to Col. JOSEPH C. BAILY, Asst. Surgeon General, president of the examining board appointed to meet at San Antonio, Tex., for examination for promotion.

Capt. MARCUS E. TAYLOR, Asst. Surgeon, having been found by an Army retiring board incapacitated for active service, is granted leave of absence until further orders on account of disability.

Capt. JULIAN M. CABELL, Asst. Surgeon, is relieved from duty at Ft. D. A. Russell, Wyo., and ordered to Washington Bks., D. C., for duty with the company of instruction of the hospital corps.

First Lieut. ALLEN M. SMITH, Asst. Surgeon U. S. A., is granted leave of absence for four months, to take effect on or about October 25, 1893.

Dr. Henry P. De Forest of Brooklyn, has been appointed Asst. Surgeon of the Thirteenth New York National Guard.